FIN TECH POLAND

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FINTECH IN POLAND
BARRIERS AND OPPORTUNITIES

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WHY THIS REPORT?

The “Polish FinTech Market – Barriers and Opportunities” report has been developed in response to the lack of reliable research on this topic. Both in Poland and abroad, the notion of FinTech is on everyone’s lips. The authors of this report were committed to compiling in a single document a compendium of knowledge on the current situation of the FinTech industry in Poland, though not without extensive reference to the context of international experiences and trends.

ACKNOWLEDGMENTS TO PARTNERS, INSTITUTIONS INVOLVED AND MARKET EXPERTS.

We would like to offer our sincere thanks to our honorary patrons: the Polish Bank Association and the Ministry of Digital Affairs, as well as the partner of the report, MasterCard, for their contributions to the project.

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Alior Bank S.A., Azimo, Bank Gospodarstwa Krajowego, Bank Polskiej Spółdzielczości S.A., Bank Zachodni WBK S.A., BGŻ BNP Paribas, Blue Media S.A., Cenatorium, Citi Handlowy, CONSDATA, Credit Agricole Bank Polska S.A., Currency One S.A., Efigence S.A., Finanteq S.A., Getin Noble Bank, GetLine.in, ING Bank Śląski, InPay, Kontomierz.pl sp. z o.o., Kundi, MoneyFriend, Paymento S.A., PayU, Pekao S.A., PKO BP S.A., Plus Bank S.A., Raiffeisen Polbank, Scanye, SkyCash Poland, StrategyLabs, Sym P2P Ltd., Urban.one, vintom.com, XCHANGER and representatives of the following law firms: Dentons, Wardyński i Wspólnicy, SGP Legal Snażyk Granicki, Traple Konarski Podrecki i Wspólnicy.

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Once again, we wish to thank all involved, and hope that it is but the first step towards developing a shared FinTech ecosystem in Poland.

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INTRODUCTION

- Financial innovation, in recent years referred to as FinTech, has become a driving force in the transformation of the financial sector worldwide. Technological innovation is changing the entire economy, including the financial services industry. The global financial crisis has accelerated this process considerably. Technological changes are opening up opportunities both for new financial institutions (such as FinTech start-ups) and for the more mature ones (e.g. FinTech banks) by reducing costs, increasing their reach, or creating new business models.

- Traditional financial centres (London, Frankfurt, Amsterdam) are transforming into financial innovation centres and stand a chance to consolidate their position even further. However, this transition period also represents an opportunity for new or less influential hubs, such as Warsaw. With careful political planning, they have a chance to join the ranks of next generation financial centres in a relatively short time, centres which are based not only on the capital market, but also focused around financial innovation.

- In the Global Financial Centre Index (GFCI), which aims to examine the competitiveness of major financial centres, Warsaw ranks 45th globally and 12th in Europe. It is also the leading financial centre in Central and Eastern Europe. Poland ranked high (24th) in the Doing Business 2017 ranking, a fact that is of crucial importance to the FinTech sector, which features many businesses in the early stages of development. At the same time, however, Poland was ranked at a distant number 39 in the Global Innovation Index (GII). These three indices illustrate the strengths and weaknesses of our market as a regional centre of financial innovation, though they fail to indicate specific barriers and opportunities. Polish banks are among the most innovative ones in the world, but non-bank FinTech companies have also been experiencing dynamic growth in recent years through efficient collaboration with the banks. Today's Poland is a "back-office" of London and hosts support and outsourcing centres of such international banks as Credit Suisse, UBS, Citi, or BNY Mellon. Brexit may accelerate this trend, but it may also create an opportunity for Poland to "snatch" some FinTech companies searching for an alternative or a parallel location.

- Poland is properly positioned to join the competition to become one of Europe's key FinTech hubs and the leader in our region.

- However, this scenario will fail to materialize if we do not create a unique economic microclimate supporting financial innovation characterized by the proper balance between openness and security. In this age of great capital and talent mobility, and lower and lower market entry barriers, Poland's national goal should be to create conditions to attract the world's greatest talents who will be able to develop their ideas, move their headquarters to the country, and create their global solutions here.

- To succeed, it is necessary to conduct correct diagnosis of the current situation, first. Then it is significant that we recognize our strengths and weaknesses, specify the right goal, and then select proper tools and build a plan or even a government strategy, culminating in its implementation by both private and public sectors.

- Coordination of these activities and close cooperation between FinTech start-ups and mature companies, recognized financial institutions, technology providers, regulators, and supervisors are a prerequisite for the financial innovation sector to become one of the engines of Poland's economic growth.

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CHAPTER 1.
THE FINTECH ECOSYSTEM IN POLAND – WHERE ARE WE NOW?

1. Defining FinTech

New technologies and their extensive application in the financial services sector represent a rapidly growing branch of the global economy. They are revolutionising the way property and resources are managed, irrespective of their function in the economy. Every day citizens, businesses and state administration carry out transactions, invest or deposit funds. FinTech relates to the innovative methods of conducting transactions associated with value management and to the technologies used for this purpose. Financial innovation reduces the time needed to reach clients with new solutions, as well as the operating and process costs whenever online transfer of value is involved.

> FinTech relates to the innovative methods of conducting transactions associated with value management and to the technologies used for this purpose.

FinTech solutions can be offered by innovative start-ups, but also by established financial organisations. The aim of financial technologies is to improve the efficiency and availability of financial services. On the one hand, FinTech represents newly created markets such as crowdfunding or cryptocurrencies. On the other, it also includes ways of accessing traditional financial products through brand new interfaces.

> **IDI RESPONSE - BANK**
>
> FinTech is defined as widely understood technological solutions that both facilitate and create the financial industry.

The FinTech industry is currently attracting growing interest. Even though the sector is in its nascence, it is reasonable to assume that it will be a significant force in shaping the entire financial services market in the near future. This is due to its significant potential for technology diffusion, or the immediate deployment of particular types of financial services in the online environment, thus allowing for their rapid take-up and prevention of financial exclusion. The fierce competition from the current service providers – mainly banks – will make it difficult to succeed in the field, which means that both the current and new players will be largely forced to cooperate.

Technology is the foundation of financial innovation. But an unambiguous legal and economic status of specific technologies involved in the implementation of new solutions (e.g. cloud computing) is a crucial prerequisite to harmonious development of the FinTech sector. Digitization strategies within

> Financial technology is used in order to improve the efficiency and availability of financial services on the market.

economies define objectives and the expected parameters, set pathways of development for individual technologies and serve as a reference point for any business ventures.

As such, FinTech always functions in a specific, local environment, largely defined by regulatory, historical, and cultural factors. As evidenced by the examples of several developed countries, a coherent national digitalization strategy results in an environment more conducive to development of key technologies, including financial technologies. In effect, new products and revolutionary business models arrive e.g. those based on the Peer2Peer model or "open data" made available by the state.

The rapid growth of information and payment technologies, and the deregulation of the market have redefined the role of recognized financial institutions (banks, insurers). At the same time the continued convergence of industries and sectors at the global level often swerves in completely unexpected directions – telecom companies take over banks, banks are moving toward digital identity management and technology firms are starting to offer financial services.

A digital transformation is incomplete without effective transfer of digital value, as every business or administrative process is predicated on the effective exchange of value. Financial markets capable of efficient transfer of digital value play a fundamental role in digital economies worldwide. For this reason the FinTech sector and the companies operating within the sector, may serve as a testing ground for individual companies, institutions, and even entire segments of the market, to test the viability of "digital transformations" which have become so popular in recent years.

A digital transformation is incomplete without effective transfer of digital value. Financial markets capable of efficient transfer of digital value and information play a fundamental role in digital economies worldwide. For this reason the FinTech sector and the companies operating within it may serve as a testing ground for blockchain solutions which have become so popular in recent years. Technological progress is accelerating with each passing day, and with it – its potential to improve our daily lives. But how can new online value transfer technologies be utilised safely? How to provide such a service to the client in a secure manner? And finally, how to ensure the security of newly emerging solutions without nipping budding innovations? Effective technological risk management on transactional markets poses a significant challenge to the FinTech market.

> For individual companies and the market as a whole, FinTech may become a testing ground for digital transformation tools.

2. The current state of the Polish FinTech market

The research conducted for the purposes of this report, which included electronic surveys and individual direct interviews (IDI), seems to point to the following conclusions:

- there are a few dozen financial innovation businesses operating in Poland, which cover all of the main areas and segments of the market known globally;

Electronic payments and financial platforms are the primary areas of the Polish FinTech market

- most of the operators, including the most mature companies, operate in the domain of electronic payments and financial platforms; other well-developed areas include analytics, machine learning, and sales channel development; several distinctive operators are also present in the crowdfunding sector;
- Polish FinTechs are largely geared towards collaboration with banks because even though the former target directly the consumer market, they do recognize the need for cooperation and mutual benefits resulting from it;
- representatives of Polish banks have also declared a favourable attitude towards FinTechs – depending on the maturity of the internal model they either observe the market or participate in it actively, primarily through direct collaboration which may take on various forms (ranging from cooperation contracts, through labs, to direct investment or acceleration programmes).

The current Polish market is characterized by positive attitude of banks towards FinTech companies and by mutual desire to work together.

2.1. Prospects for banks and established FinTech institutions

EXAMPLE FROM THE MARKET

BLUE MEDIA AND PAY U – LEADERS OF POLISH FINTECH

For years, these companies have led the charge in the payment sector of the Polish FinTech market, even when the notion itself was not widely known or popular. Both operators have matured over the years, attaining the status of domestic payment institutions and becoming veritable corporations. Additionally, PayU has been coordinating the development of the payment business in the Central and Eastern Europe region from Poland. Both companies have been developing their products and increasing business volumes by offering their innovative payment products to banks, e-commerce merchants and retail customers. The Polish marked owes them instant bank transfers, Pay-By-Link transactions, e-wallets and social lending. Equally important was the creation of the additional revenue-generating space for banks which identified the profitable nature of the channel at an early stage of e-banking in Poland and facilitated further investment in its promotion and functional development.

According to a traditional approach to the financial technology market, it can be divided into start-ups and banks. Being technologically-advanced the Polish market shows a relative homogeneity—there is quite a number of similarities between start-ups and banks. Innovations are created by development, IT, and remote channel management departments in major Polish banks (some of which such as mBank and Alior resemble start-ups), and well-established payment sector companies such as Blue Media or PayU. There are many clear similarities with regard to the dynamics of functional changes, market aggressiveness, and a particular pattern of employee selection.

For this reason, there is more and more talk about "Fin-Tech banks" or "FinTech in banks", and the most innovative banks see themselves as part of the FinTech sector.

The majority of Polish banks stand out when compared to their European counterparts in their use of cutting-edge solutions. In particular, their card, online, and mobile payment technology is very advanced, and can be held up as an example to Western European countries. It is important to mention state-of-the-art interbank payment infrastructure. Established in 1994, the Elixir system enables efficient and secure transfers and direct debit. It has since become a point of reference for the country's payment innovation. Express Elixir, however, is Europe's second instant payments system. We are at the forefront of technological advancement in Europe in the implementation of such solutions as contactless payments (including both card and HCE mobile payments), bank-branded pay-by-link payments, or sector-wide solutions such as the BLIK mobile payment service. According to the data provided by the National Bank of Poland (NBP) these improvements affect consumer behaviour and non-cash payments are becoming increasingly popular among customers (however, the volume of cash transactions in Poland remains very high). High popularity of mobile and e-banking (with almost 7 and 14 million active users, respectively) stems from both technological diffusion and the Polish society's openness to innovation and high dynamics of development of Polish transactional banking systems. Implementations that stand out within European and global contexts and deserve special mention include instant (express) transfer systems, "pure online" remote channels of financial product sales, Personal Finance Management (PFM), and remote customer service systems such as video advisory services. Many of these solutions have been implemented

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by banks in close collaboration with FinTech businesses, many of which were near the start-up stage when executing their first implementations for the banks.

BLIK AS AN INTERBANK FINTECH

The Blik system, provided by the Polish Payment Standard, is an example of an interbank initiative aimed at the systemic creation of a sector-wide financial innovation.

The ongoing FinTech revolution has created an environment where banks have to and want to redefine their approach to FinTechs. As stated by Małgorzata Jarczyk-Zuber, Innovation Driver at ING Group and Director of Innovation Centre at ING Bank Śląski, "The FinTech industry may be one of the hottest topics in the financial world. Initially, banks approached it as a threat. However, it quickly became apparent that the most beneficial option for both parties was working together in a partnership which would combine corporate rigour with entrepreneurial vigour." Banks are watching the sector closely, focusing on industry start-ups in particular. Almost all bank representatives interviewed in the course of the IDIs for this report pointed to this fact. Because of the upcoming regulatory changes under the PSD2, most institution consider this new trend, i.e. inclusion of FinTech in the financial ecosystem, to be a foregone conclusion. FinTechs very often have ready, innovative solutions that go beyond the paradigms of traditional banking. However, realizing the potential of the new solutions requires sufficient business volume and consumer trust. This is what banks can offer to start-ups. Natalia Załęcka, Director of the Digital Department at Getin Noble Bank, emphasizes the aforementioned mutual stimulation of market growth dynamics by the two key types of institutions operating on the market – "The FinTech market provides additional stimulation to the development of e-banking channels. We have gained new experts and partners who share our drive to find out new and better ways of satisfying the needs of our Clients. Online and mobile banking in Poland has developed rapidly for the last several years, which has enabled banks to carry out interesting projects, both independently, and in collaboration with FinTechs. That is why cooperation between those sectors tends to have

IDI RESPONSE - BANK

The battle will have no winners – there's no escape from PSD2. Banks won't be able to close the door on areas of cooperation with FinTechs.

REPORT EXPERT
Natalia Załęcka, Getin Noble Bank

The beauty, but also ingratitude, of our industry is that we all deliver more or less the same thing. This also means that we are constantly working on similar problems, and that disseminating good solutions is relatively easy. Fortunately, Clients still have plenty of unfulfilled needs, or needs that haven't been satisfied fully. Therefore, the market can accommodate both banks and FinTechs, as well as other companies not covered by the current definition of the financial sector.

multiple facets – it may be purely technical or purely business-like. Banks are looking for partners for collaboration on projects, but they also offer opportunities to scale up novel, externally-created solutions." Because of the regulatory changes under the PSD2, most institutions consider this new trend, i.e. inclusion of FinTech in the financial ecosystem, to be a foregone conclusion. As reported by one of the surveyed company in the bank sector, FinTech companies often have ready-made, innovative solutions that go beyond the paradigms of traditional banking. However, realizing the potential of the new solutions requires sufficient business volume and consumer trust. This is what banks can guarantee to start-ups.

At the same time, there is the question of the worst-case scenario, i.e. the prospect of the customer relationships fostered by the banks being taken over by FinTechs (mostly those originating from major global technology companies), for example by complementing their current Internet browser-based solutions or social media solutions with financial services. According to Daria Pawęda, Director of the Internet & Mobile Banking Department at Bank BPS, "A question arises whether or not FinTech, defined as companies that provide financial services through utilization of new technologies (some of which are start-ups), poses a threat to the world of banking and finance. After all, due to FinTech's flexibility, fast-track decision-making procedures, and openness towards innovative solutions, the industry is indeed primed to take a substantial share of any market that is somehow related to payment services, as evidenced by the so-called Uber effect, which more and more people are pointing towards." The in-depth interviews included questions on the future of the market in this regard, and the answers provided were of crucial importance. As of yet, the sector is not unanimous in its predictions – one forecast claimed that: "Without start-ups, banks have zero chance of protecting their market share against innovative banks. a bank is not a software house, it's a financial institution." Others argued that there is need to differentiate between "global" and "local" FinTechs, or stated that the two markets will follow divergent paths due to their distinct, almost completely separate natures (resulting mainly from them being subject to different regulations).

However, most banks are betting on collaboration. "We regard them with respect and not as competitors; we believe in cooperation and strategy – we acknowledge the role they play. We have already entered into contract with some of them, and we are satisfied with these initial deals. There are also intermediaries between these two worlds who will benefit as well." – said a representative of one of the surveyed banks.

IDI RESPONSE - BANK

It is not a matter of competition, and I don't think banks would stand much of a chance in a battle. FinTech, in its current form, is able to respond in a far more flexible manner, and to operated using the agile rather than waterfall approach. As such, a bank can transform its IT operations into a FinTech enterprise to have a chance to compete, although sometimes it's easier for the bank to outsource the services to FinTechs and get faster results than when acting on its own. a well-managed FinTech with a proper organizational mark-up has a great potential for growth. The synergy between banks and FinTechs may ultimately result in a reduction of costs for the bank.

2.2. Prospects for the FinTech sector – start-up

The dynamic pace of technological development, especially in the areas of mobile, data processing, artificial intelligence, or the Internet of things, means that FinTech companies are continuously exploring new opportunities for their services and products. Whenever these technologies are utilised to satisfy the users' financial needs in a functional and ergonomic manner – that's when the opportunity strikes for a successful FinTech service. In Western Europe, and particularly in the United States, the strength and the momentum of the sector was often determined by the underdeveloped electronic channels provided by the banks. Bernard Gołko, a FinTech sector market expert, points to our local context: "While Poland is indeed lagging behind in many sectors of the economy, the Polish financial industry is definitely an innovative one, not only when compared to the CEE region, but the whole of Europe. This is largely a bonus for us starting from the second position. It allowed Polish banks to utilize cutting-edge solutions from the get-go. This does not mean that our FinTech market has no room for development – quite the opposite. The digitised millennial entering the market, the falling costs of processing and accessing information, the availability of highly educated IT specialists – all these factors have provided a fertile soil for the emerging industry. Other contributing factors include the size of the market and Poland's ambition to become a leader in the CEE region."

> The Polish FinTech market may also fall into the low-growth trap.

For this reason, Polish FinTech start-ups are attempting to carve out their own niche in the specifics of the Polish market, while at the same time keeping open the possibility of expanding their businesses to the global market – though this still poses the risk of falling into the "medium-growth trap". According to Andrzej Szewczyk, Vice-President and Managing Director of Efigence S.A., "Starting a business in a much smaller country, such as Finland or Iceland, obviously requires focusing on development abroad, since the local markets are not sufficiently large or absorptive. Poland is a medium-sized country – large enough to support various kinds of enterprises, yet too small for these enterprises to gain ground on a global level. This local approach to business remains a fairly significant roadblock for the growth of Polish enterprises."

In the course of the direct interviews, companies from the sector declared their commercial strategies. These can be classified into two main types: focusing on developing the company's B2B offer (especially in dealings with banks) or directing the offer directly at the end customer. It is important to note that in both cases the value offered by the companies was similar and could not have been generated by the banking sector directly while maintaining the same quality and pace of transformation. On the one hand, the value is generated through exploration of business areas which the banks initially did not take advantage of (such as online currency exchange services or online lending services). These areas offered tangible practical and financial value to consumers. On the other hand, there was also another criterion of importance – the ergonomics of the process and the ability to adapt it according to the expectations of a digitally native consumer who expects the same calibre of digital experience that they have become accustomed to while using other consumer applications in the mobile or online environment. As pointed out by Tomasz Framski, CEO and co-founder of CONSDATA, „Financial institutions have to take into account the needs of many external and internal stakeholders. Meanwhile, FinTech companies can focus primarily on the needs of their customers. FinTech companies constitute an excellent testing ground for B2C financial services. They have the capacity to quickly set up the optimal conditions for implementing a service on the market. a service on the market. However, they do not possess sufficient legal expertise or financial resources." Adam Sobczak, Member of the Board and co-founder of Cenatorium, also recognizes the importance of the shifting customer perception of financial services: "People tend to optimize their work – they set it up so that they can get as much done as possible with minimal involvement. They don't care whether it's a bank managing their accounts, or their cable TV provider. We are seeing a very distinct worldwide trend of decreasing customer loyalty to traditional banking. The sooner financial institutions in Poland take note of that trend, the better off they will be."

REPORT EXPERT
Tomasz Framski, CONSDATA

FinTech has the capacity to focus on the needs of the Customers, while at the same time offering a practical testing ground for B2C financial services.

What can we expect to contribute to the growth of Polish start-ups? The most evident opportunities include the creativity of Polish people, the considerable potential of domestic human resources and IT companies, and the capacity for international expansion. The survey has shown that some of the companies within the sector began their operations abroad (i.e. on the British market) and were planning to enter the Polish market as the next step; then, based on the accumulated experience, they intended to try and expand to other markets, either on their own or through local intermediaries. Some companies are already successfully implementing their specialized solutions in markets outside Poland. Examples include vintom.com and

Implementation of the PSD2 directive is one of the most significant regulatory changes to the market which represents a developmental opportunity for start-ups in the FinTech sector in Poland and the entire European Union.

Ailleron. As stated by Jakub Wronkowski, magic evangelist at vintom.com, a company that already has implementations for several Polish financial institutions under its belt, "the Polish market for our services is huge, while the competition is minimal. Personalized video technology is something of a novelty, which is why our job is to educate the domestic and foreign markets. Thanks to the scalability of our service, we were able to launch our first campaigns as early as this year, including ones in Slovakia and Malaysia. We are now preparing a campaign aimed at customers in South Africa and the Czech Republic. Right now we want to focus our efforts on expanding internationally and acquiring new markets, as per our 2017 strategy." Grzegorz Młynarczyk, Vice-President of the Management, Board of Ailleron SA, talks about the experiences and plans of his company: "The LiveBank system has already been successfully implemented not only among the Polish banking industry leaders, such as mBank or Bank Zachodni WBK, but also at Commerzbank in Germany and at Standard Chartered in Singapore and Malaysia. For the latter, seven additional national implementations are in the pipeline, including China and India. Implementations are also underway at the largest Polish bank, PKO BP, and the largest bank in the Gulf region, Emirates NBD. Thanks to our partnerships and extensive sales efforts abroad, virtually not a week goes by without us giving multiple presentations on the virtual branch concept to leading banks all over the world – customers in Brazil, Scandinavia or the Balkans will soon be able to enter the age of banking 3.0."

DEVELOPMENTAL OPPORTUNITIES FOR THE POLISH FINTECH MARKET

- PSD2 AND API BANKING
- EIDAS (ELECTRONIC IDENTIFICATION AND TRUST SERVICES)
- OPENING UP OF PUBLIC DATA
- VALIDATING SOLUTIONS ON THE DOMESTIC MARKET BEFORE GLOBAL EXPANSION
- POLAND AS A EUROPEAN FINTECH HUB
- AGILE AND DYNAMIC RESPONSE TO CONSUMER NEEDS

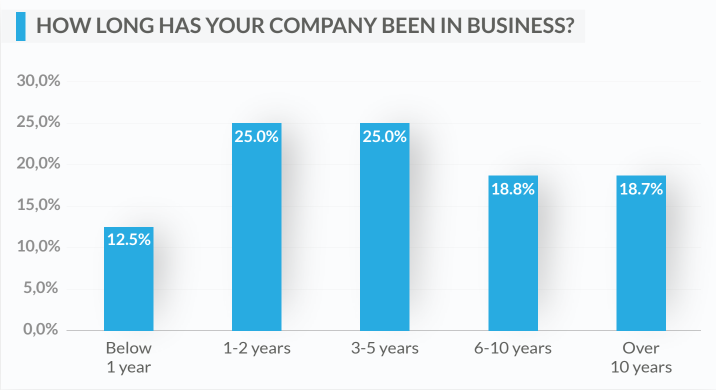
The market-wide changes in technology and legal framework, especially the ones on the level of the common European market, are another factor that contributes to the development of the industry. Tomasz Framski, CEO and co-founder of CONSDATA, elaborates: "The PSD2 (Directive of the European Parliament and of the Council on payment services in the EU's internal market) is also opening up new opportunities to us. However, there is a risk that by the time the Polish government begins to develop financial solutions based on the directive, the European market will have already taken the lead, as it has already been in compliance with the PSD2 for some time. The question is then, whether in a year's time we will be creating new financial services right here in Poland, or will we be buying them from other European countries? One solution to this problem would be (more or less formal) agreement between the FinTech industry and the banks with respect to areas covered the PSD2. This would allow us to provide a new level of quality to the Customers. The question is whether or not such a solution is feasible...". Monika Kania, General Manager and co-founder of XCHANGER, has this to add on the subject:

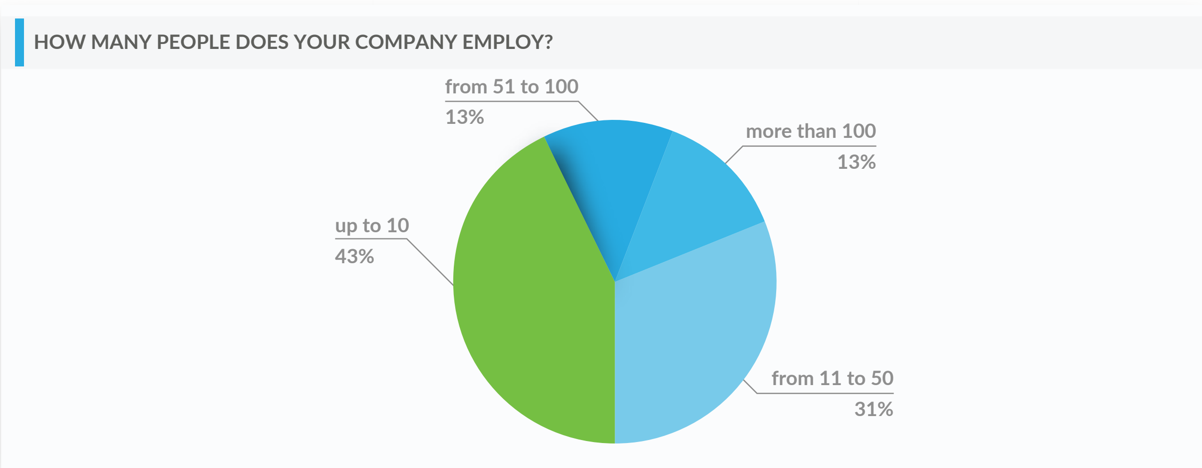
“Introducing new types of Third Party Payment Service Providers (TPP) is a step towards increased automation and complexity of online services that will provide Customers with access to financial services without time or location limitations, which reduces the time involvement of the Customer and allows the provider to personalize the customer service. Personally, I see a large potential in building new channels of reaching the Customer and new channels of customer service, e.g. through unsupervised learning algorithms.” Another business opportunity that young and dynamic industry companies could take advantage of is open access to public data. Wojciech Witowski, New Markets Development Director at Cenatorium in charge of the Urban.one brand, believes that “Even though the process of opening up public data has not been going entirely smoothly, it has still allowed us to build a solid business based on reliable information in three years. Drawing upon our previous experience with B2B, we decided to take our ideas further. Thus, we have granted to the Polish consumer access to information that was previously only available to business representatives. Now, thanks to Urban.one, everyone can find out the real value of an apartment on their own.”

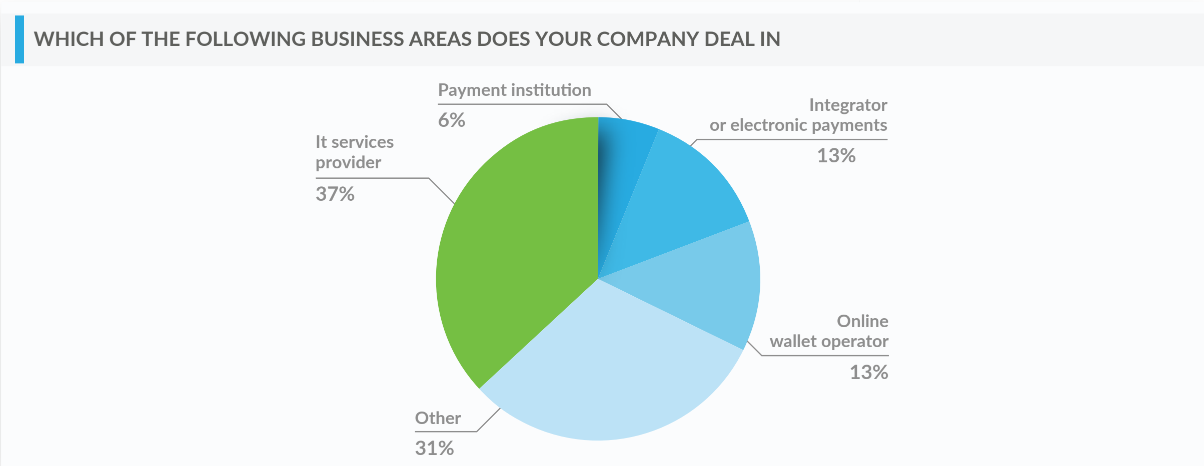
Andrzej Szewczyk, Vice-President and Managing Director at Efigence S.A., provides the following brief rundown: “We are in a very interesting stage of the evolution of the FinTech market. The time of excitement, feeling out potential partners and overflowing ideas is coming to an end. What’s coming next is the stage of verification of concepts in the real world, not only on the basis of their media appeal, but primarily based on the quality of their implementation, the capacity for fast strategy modification, and of course, the potential for further development.” Ewa Chronowska, founder of CEE Business Angels Network and an investor, adds a couple of prerequisites that must be fulfilled if the best-case scenario is to be realized: “Despite favourable trends and dynamic growth within the widely defined start-up ecosystem, there are still changes that must be made to the business environment in Poland, if we want to catch up with the West. The good news is that, thanks to EU regulations and the active support from the Polish government and numerous organizations, there is a good chance that the Polish FinTech scene will experience rapid growth in the coming years. While there is a bit of a pie-in-the-sky undercurrent to the increasingly prevalent forecasts which place Poland as the FinTech hub of Europe, becoming the leader of the region is not outside our grasp, provided there are favourable regulatory winds from Polish and EU regulators.”

Survey results – a profile of Polish FinTechs

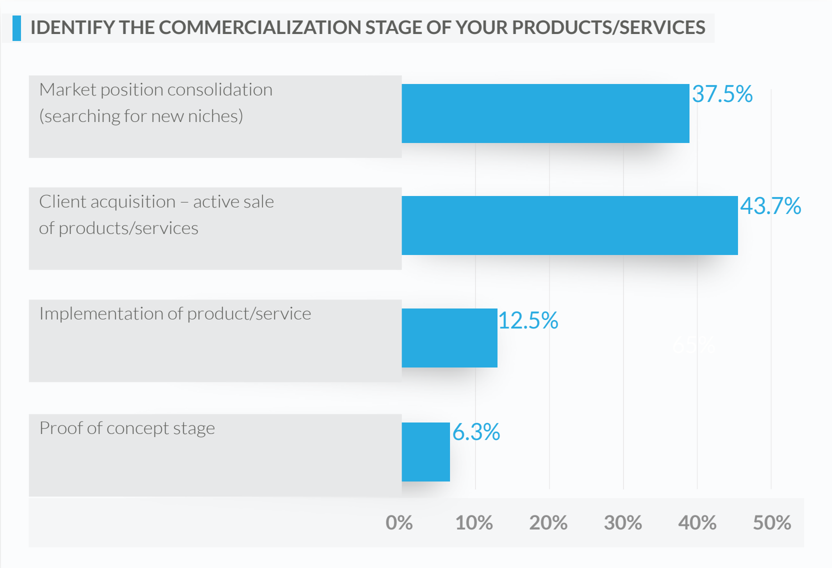
The findings from the quantitative survey have allowed us to answer a number of questions regarding the current range of activities of FinTech sector companies. Out of the FinTechs that took part in the survey, 37.6 per cent were companies that have been in business for less than 2 years, 25 per cent are 2-5 years old, and 37.5 per cent are older than 5 years. Most of them (74 per cent) were small enterprises with no more than 50 employees. As much as 37 per cent of them were IT solution providers – the largest group among the surveyed entities. The second largest group comprised companies offering financial products and services – payment institutions, integrators, paying agents and e-wallet operators.



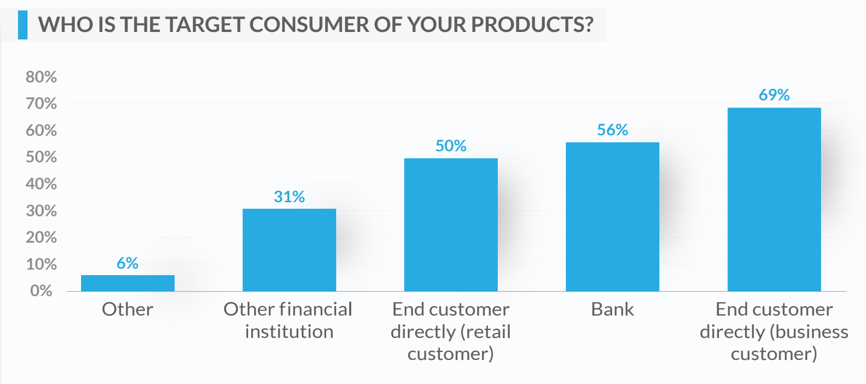


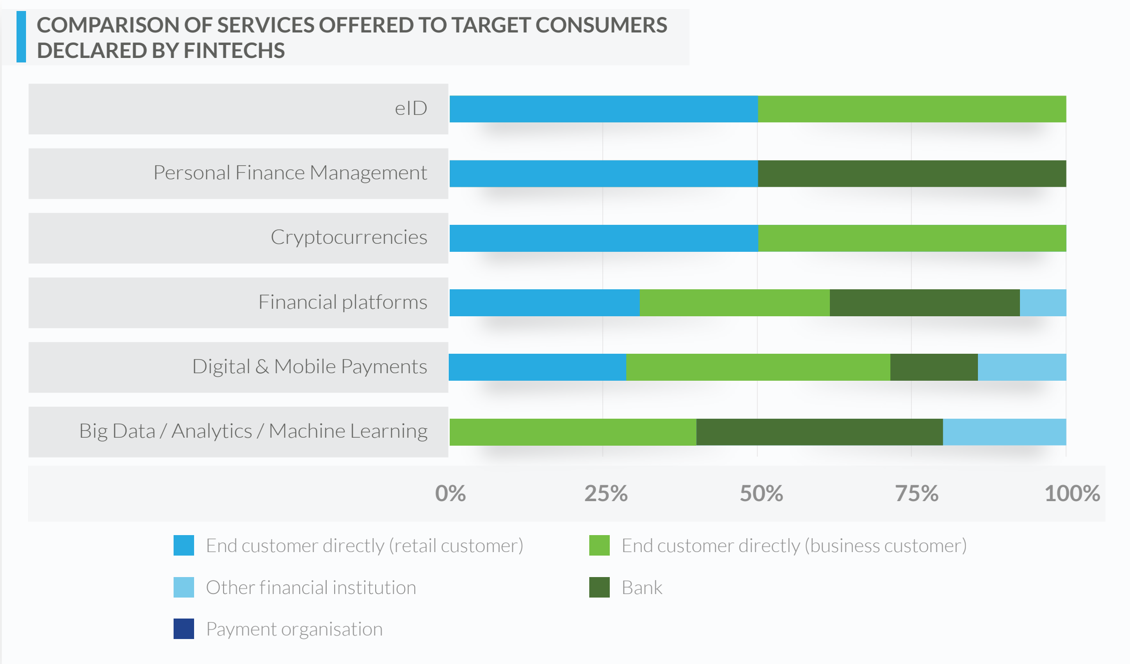


Even though the majority of the respondents were relatively small businesses employing 50 people or less, most of them have a product or service ready, and are searching for new customers or trying to consolidate their position on the market. 12 per cent of the companies were still in the phase of product and/or service development and implementation, whereas for 6 per cent of the companies their offer was still in the conceptual phase.



Results of survey – the target group of Polish FinTech





Most of the companies that took part in the survey aim their product offer at banks, financial institutions, and business clients. Individual clients are a target market for half of the companies. a cross-analysis of the questions on the target customers and products on offer shows how particular products are positioned by the FinTech market. The key findings of the cross-analysis are as follows:

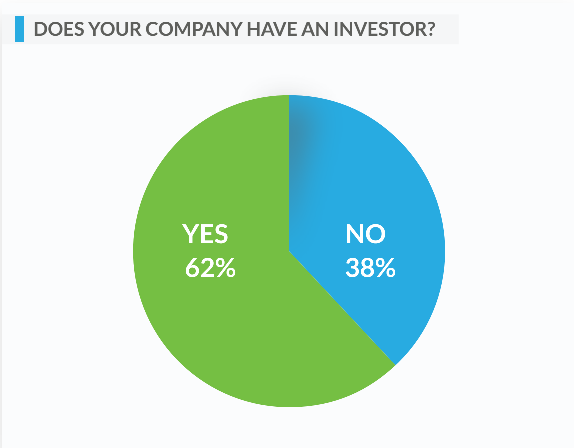
- Start-ups that deal in eID-based services aim their offer directly at end clients (both retail and business ones). Somewhat surprisingly, the start-ups do not target digital identity management services at banks. Banks are natural consumers of such services, especially since shifting sales to remote channels and digital transformation constitute key strategic goals for the banking industry in the coming years;

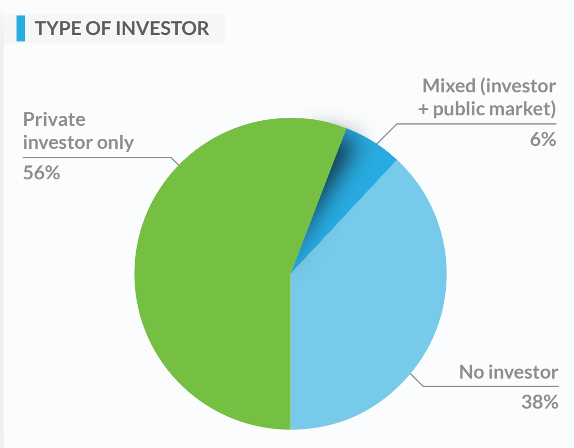
- As with eID services, electronic payments are considered by start-ups to be a product mostly for the end customer. Only 28 per cent of the respondents indicated payments institutions and banks as recipients of these services;

- Interest in Big Data was shown to vary between the start-ups and the banks. Only 20 per cent of the banks reported the intent to implement new solutions for large data set processing within the upcoming year, despite their previously declared view of Big Data as a strategic area of cooperation with start-ups. In contrast, start-ups consider their Big Data products to be intended specifically for banks and other business customers. Once again, there is clear distinction between what IT departments view as strategic investments and what innovation departments of banks are interested in.

Survey results – the ownership structure of Polish FinTechs

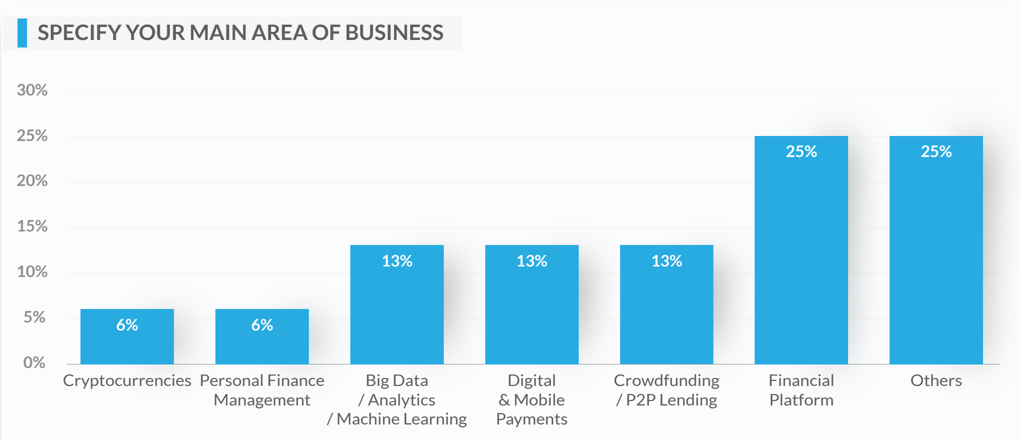
Among the start-ups that took part in the survey, most declared they had investors, mostly private ones. Given the small scale of the FinTech sector, at least in terms of the number of entities, it may be the case that a successful FinTech business can only be built with private funds, whose supply in the Polish economy is limited. The data seems to suggest that the development of start-ups is correlated with direct investments in start-up businesses, as indicated by the cross-analysis of the data regarding the number of employees and the maturity of the surveyed companies.



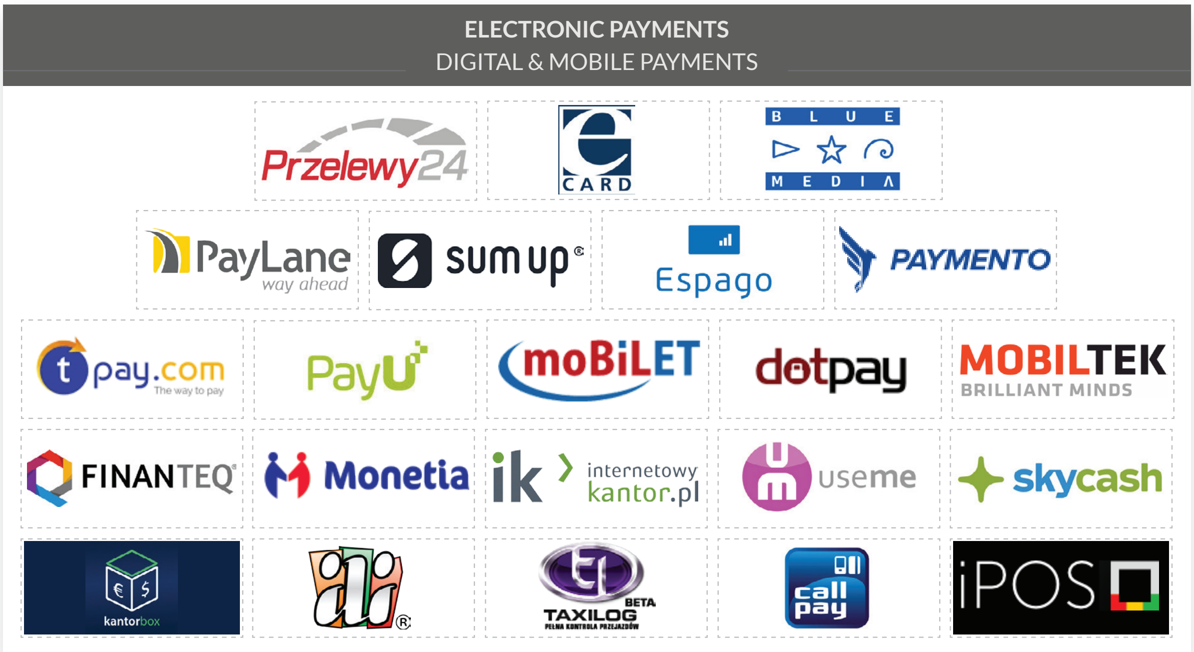


2.3. Key areas of FinTech

Within the Polish market, the main types of services provided by FinTech companies are electronic payments and financial platforms, loans, budget planning, as well as access to currency transactions, cryptocurrencies or investment. Some of the enterprises are marketing their services to end consumers – which includes individual, business, or specific clients (i.e. online retailers) – others focus on working with banks and other financial institutions, thus, in a sense, relegating themselves to the background. As a result, these companies have limited or non-existent brand awareness in the consumer market. Other companies attempt to combine the two approaches (for example, PayU and Blue Media mentioned above).



The majority of the companies that took part in the electronic survey defined themselves as financial platforms (25 per cent). The fields of operation – electronic payments, crowdfunding/P2P Lending, and analytics/machine learning were each selected by 13 per cent of the respondents as their primary line of business. 6 per cent chose cryptocurrencies, while another 6 per cent pointed to Personal Finance Management. The remaining 25 per cent selected such fields as AISP, InsurTech/P2P insurance and sales automation, among others.



According to the data supplied by PRNews/Bankier.pl, in the third quarter of 2016, almost 7 million Polish customers are currently using mobile banking, primarily for making payments. The rise of online and mobile channels of payment has been made possible by developments such as the popularization of smartphones, the decreased costs of Internet access from mobile devices and the general increase in the popularity of noncash payments. This is where the collaboration between the FinTech industry companies and the banks is the closest (for example, the banks use FinTech-based payment tools to provide payment processing to online retailers), but they may also be seen as directly competing against each other – the PSD2 directive, cited above by experts, may contribute to the acceleration of these processes.

Electronic payments in the FinTech sector have a wide range of applications, limited only by human imagination. The most popular services offered by FinTech in this area include:

- integration of electronic payment methods for online retailers and "e-BOKs",
- hi-tech means of electronic payment at physical retail and service outlets,
- e-wallets for remote payments, e.g. in e-commerce environments, on public transportation systems, at cinemas, etc.

DATA ANALYSIS AND COGNITIVE ALGORITHMS
BIG DATA / ANALYTICS / COGNITIVE ALGORITHMS

This is one of the most rapidly growing areas of FinTech. Its most distinguishing feature is the wide variety of provided services, including, but not limited to: database creation and management, providing support to enterprises in gathering specialized information, customer identification, customer segmentation, financial offer adjustment, alternative credit score calculation methods, management of household finances, document automation in the cloud, consulting services on optimization and digitization of payment processes, and real estate appraisal.

FINANCIAL PLATFORMS

In the area of FinTech financial platforms, non-bank lending providers have taken the biggest piece of the pie. The second most developed segment of services is online currency exchange. The financial platforms of the Polish FinTech sector also include mobile banking solutions, added-value service platforms and credit consultancy through comparison of the offers available on the market.

CROWDFUNDING / P2P LENDING

This segment of the Polish market offers, first and foremost, crowdfunding of business ventures and social initiatives, charity fundraising, social lending, and P2P currency exchange platforms. The business area of social lending takes advantage of the strength of crowdfunding and the power of social groups to fill a gap in the capital market and provide funding to project creators under agreed conditions. One part of the equation is formed by the enterprises that require capital at a specific amount, at a specific interest rate, and for a specific goal. The second part is the capital owners, who can decide whether or not to fund a particular goal.

The crowdfunding market is rapidly expanding. New platforms are constantly emerging and their scope is constantly expanding, too. Both social and market perception of these types of projects is improving as evidenced, e.g. by the total amount of funds pledged through the crowdfunding portal Siepomaga.pl (over PLN 100 million) or the eagerness with which the commercial sector (including its financial subset) used these portals in advertising campaigns (e.g. the promotional campaigns launched by the Wspieram.to portal with the Polish Payment Standard – the operator of the Blik system). Proper advertising campaigns are the key to success in crowdfunding. The number of effective crowdfunding campaigns and successfully completed projects appears to be steadily growing. In the very near future, we can expect to see the creation of completely new types of crowdfunding initiatives focused on specific, specialized subject categories.

INVESTMENT BANKING / CORPORATE

SQUABER

starfunds WYNIKI BUDUJĄ ZAUFANIE

The number of individual investors in the trading industry has been steadily increasing for the past few years, and the investment market is becoming more and more complex. The exchange of experiences and know-how has become the key consideration for individual investors, which coupled with the limited availability of high-quality consultancy services on the financial markets has led to the creation of social trading platforms.

These kinds of platforms provide investors with fine-tuned analytical tools, and more importantly – with access to the investment history of the users of the platform. This allows others to mimic investment moves and share the potential profits within the community. Investment platforms themselves profit from successful investments, and the addition of the social aspect simplifies investment processes, reduce the learning curve for participation and minimizes transaction risk.

The range of services that investment platforms provide includes, but is not limited to, services related to: business information on companies, interactive graphs, investment and dividend history, media monitoring, educational components, investment strategies, automated technical and financial analyses, stock exchange alerts, or contact with specialists that deal with investment on the financial markets.

BLOCKCHAIN & CRYPTOCURRENCIES

billon

BitMarket

coinfirm

BitBay

BITMASZYNA

InPay

Cryptocurrencies – which are based on encryption technologies and distributed data structures – have revolutionized the infrastructure of transactional markets. Even though the potential of bitcoin, the most widely used cryptocurrency, remains mostly untapped for now, this new currency is nevertheless seriously challenging the old paradigms of traditional finance. The use of cryptographically secured currencies in central banking or on payments markets represents a potential means of transformation of the monetary systems whose scale of impact on the global economies is impossible to predict today. Poland has already seen the emergence of bitcoin and litecoin exchange platforms that allow their customers to convert them to traditional currencies such as euro, USD or PLN. The users of such platforms can easily buy and sell virtual currencies. There is also an online service, Getline, which offers bitcoin P2P lending and provides bitcoin micro-credit through the same channel. In November 2016, the Golem project, launched by the Polish company imapp, raised USD 8.6 million in twenty minutes through crowdfunding to create a decentralized, global computer. The purpose behind the project is to combine the idle processing power of private computers into a network that will act as "Airbnb for computers". Golem transactions will be conducted through the public blockchain Ethereum.

PERSONAL & BUSINESS FINANCE MANAGEMENT

MoneyFriend know your finances

efigence

Personal & business finance management companies provide platforms that integrate with accounting systems for personal and business budget management. Crucially, such platforms are not limited to expenditure analysis – they also include functions for acquiring consultancy services regarding the user's budget.

INSURTECH

KUNDI

mfind

The insurance sector is one of the largest in the financial industry. Slowly but surely, also its counterpart in the FinTech world is emerging (InsurTech). InsurTech services are focused on providing specialized insurance comparison engines and on the increasingly popular peer-to-peer mobile insurance.

OMNICHANNEL AND DEVELOPMENT OF DISTRIBUTION CHANNELS
OMNICHANNEL

The FinTech industry players whose activity falls within this area mostly deal with support for financial institutions in respect of optimization of digital sales channels and communication channels. The banks which have noticed the sales potential of a market with millions of customers who are using online and mobile transactional channels on a daily basis are making a decisive push to update these services with new sales and communication components. This is where the FinTech companies come in – through their unique dedicated solutions, such as video channels, personalized marketing and e-application platforms, they can effectively complete the service range and technical competences of large organizations. Several companies from the sector are also successfully implementing their solutions in markets outside of Poland.

REPORT EXPERT
Adam Wiśniewski, Director of PwC Drone Powered Solutions

The financial sector requires that the collected data is up-to-date and precise, and with the digital transformation within the industry, these requirements are becoming more and more stringent. Leading insurance companies are already utilizing drones in various stages of the insurance process. Drone inspections can obtain irrefutable documentation. Before even concluding an insurance contract, the insurer is able to identify risks stemming from the condition of the property or the terrain, which in turn allows them to more accurately calculate the insurance premium or to refuse to cover a property if the risk is too high (e.g. due to a high likelihood of flooding). The data acquired during the initial appraisal of a property can also be used in subsequent stages of the insurance process, e.g. in the event of damage. The documentation gathered both before the conclusion of the insurance contract and after the occurrence of the damage can be used as evidence during the loss adjusting or in the event of a legal dispute. By comparing the image data from before and after a damage event we can quickly and precisely assess the extent of the damage and verify whether the insurance company is liable.

CHAPTER 2.
BARRIERS, OPPORTUNITIES AND CHALLENGES IN THE DEVELOPMENT OF FINANCIAL INNOVATION AND THE FINTECH SECTOR IN POLAND

The three main catalysts of the development of financial technology and, consequently, the development of the electronic economy as a whole, are: clearly established strategies of the digitisation of the country, a pro-innovation ecosystem and an incentive system for start-ups and corporations. In order to achieve these ambitious goals, identification of technological, cultural, educational and legal barriers is of utmost importance.

1. Technology

The Polish financial market landscape is a peculiar one – the sector is modern both in terms of the offer for customers and the back-office systems, which is outstanding in comparison to the Western European or American markets. Significant innovation in Polish banking is implemented in the start-up model ("FinTech banks"), by creating new banks from scratch (mBank, Alior, FM Bank, Idea Bank) and by big, well-established multichannel banks emphasising optimisation and possessing competences necessary to generate innovation on their own (PKO Bank Polski SA, Pekao SA, Bank Zachodni WBK SA, ING Bank Śląski SA, Millenium Bank SA, Getin Noble Bank SA) – "FinTech in banks". The Polish banking system has an excellent technological position – by dint of the so-called leapfrogging we have quickly implemented technologies which are still underdeveloped in the USA or Western Europe. Advanced technology in Polish banks results in relatively modern end services, which prevents the customer from experiencing urgent inconveniences when using remote channels. Paradoxically, one may risk a statement that modern technologies in the banks in many cases ruin business opportunities for start-ups in the FinTech sector under our analysis.

However, technology and business do not function in a void – they are dependent on legal conditions. Legal barriers, in turn, have an impact on technology. For instance, imperfect regulations in personal data protection prevent banks from using modern technological solutions to their full potential. This can be clearly seen when it comes to collection and usage of customer data and application of cloud computing. Such solutions are significantly cheaper and easier to implement. However, legal inconsistencies combined with the expectations of the supervisory body prevent decision-makers from making new investments. In order to avoid sanctions,

REPORT EXPERT
Norbert Biedrzycki, Atos Polska

We notice that the banks are reluctant to use cloud-based IT solutions, which are a significant technical element of innovation, following recommendations of Polish FSA. a more favourable approach of the regulator towards the cloud would help change business models and apply digital transformation.

banks apply to the Financial Supervision Authority (Polish FSA) for an opinion whether their planned solutions are in compliance with law. Obtaining of an opinion is a long-lasting process which creates significant delays in the implementation of innovations and increases investment costs. On top of that there are also doubts about concentration of services and the resulting dependence on providers outside the EU.

The business aspects of regulations relating to outsourcing also pose difficulties. These include the multidimensional interpretation of unlimited liability of a provider of outsourcing services, discussions on the extent of audit of such solutions, and risk analysis and monitoring methods. Regulations governing outsourcing have been in effect for many years, however, according to Polish FSA representatives, banks have inadequately undertaken actions aimed at effective optimisation of risks connected to outsourcing agreements.

Excessive cautiousness of the participants will not stop the process of innovation in the sector, but it will significantly lower its quality and scope. In conclusion, legal ambiguities in interpreting regulations governing new technologies in Poland result in business uncertainty of such solutions, which creates a significant barrier to the adoption of modern, agile and cost-effective technologies, and as a result, it prevents the dynamic development of transactional markets, which in turn impacts the whole economy.

> Legal ambiguity equals business ambiguity. It is a significant barrier to the adoption of modern, agile and cost-effective technologies in the finance sector.

The issue of cyber security also cannot be overlooked when it comes to technology. As pointed out by Wojciech Dworakowski, the leader of the Polish branch of the OWASP Foundation and the co-founder of Securing, "FinTechs, thanks to innovative ideas and technologies process significant numbers of financial transactions and sensitive information more and more often. The trend will be even more visible after the implementation of PSD2, especially PIS and AIS interfaces which will allow companies to create new services independently of banks. However, a questions arises: will FinTechs, being start-ups by their nature, invest an equal amount of time and have equally big budgets as banks to take care of the safety of data and transactions? Currently, their activity is largely unregulated – there are no strict requirements they have to comply with. So far there have been no spectacular attacks on this kind of systems either. However, the bigger the money and the more data flow through FinTech systems, the more attractive target of criminal activity they will become. Security regulations are inevitable (some of them have already been included in PSD2) and the FinTechs which take care of security now will not need to catch up in the near future, thus gaining a competitive edge."

2. The culture of innovation

Stability, being the backbone of financial institutions, very often translates into excessive precaution in taking business decisions. By having in mind a common or even a national goal of increasing innovation, given the current situation, it can be concluded that the culture of innovation in Poland requires systemic action. Polish companies do not devote enough resources to innovation, which by many is treated as public relations activities, a fad or a whim, rather than a high priority investment. Innovation departments, similarly to newly created departments of digital transformation, only have small budgets at their disposal which in most cases allow only for pretend activities. The scale of funds devoted to innovation by Polish companies is 50 per cent smaller than in developed European economies. According to a report by DELab of the University of Warsaw and the Polish Business Roundtable, our current expenditure is 0.94 per cent of GDP, while the average or OECD countries is 2.4 per cent of GDP. In 2016, Poland was listed by the European Commission among "moderate innovators" – in the European Innovation Scoreboard Poland ranked 22 out of 28 countries. The top of the rank was occupied by Sweden, Denmark, Finland, Germany, and the Netherlands. The culture of innovation does not only mean a proper budget but also an effective change of attitude within an organisation. Programs which help increase the internal spirit of entrepreneurship function as a supplement to the budget, which increases the rationality of their application.

One of the biggest challenges for the Polish finance sector in boosting the internal innovativeness is changing the attitude by accepting failure and learning from mistakes. In order to do so, a budget and a team are not enough – what is needed is a coherent policy, which allows to manage smartly the risk of investing in innovative projects, and a model for its implementation. Lack of an approach for the cooperation with FinTech start-ups does not only mean a lack of decisiveness and administrative inertia resulting in an ineffective usage of resource but a wasted opportunity, above all. a considerable part of both Polish and foreign companies in the FinTech sector are institutions operating on a global scale. If they are not given support in their domestic market, they will never return to it. The outflow of the best ideas will cause delays in adopting technologies and the price of their implementation will be considerably higher.

> The ability to allow failure and learning from mistakes is a huge challenge for the Polish financial sector. In order to create these skills, we need a coherent policy of intelligent investments.

In Poland there is no shortage of resourceful people with excellent knowledge of the FinTech technology and industry. a good example is a global Polish start-up Azimo, offering money transfers services to more than 160 countries in 80 different currencies. Another one is Atsora, a Polish global online and mobile platform for small and medium businesses, integrated with bookkeeping services, CRM and electronic banking, offering support for company management. As stated by Karolina Marzantowicz, CTO of Banking IBM Polska, "Sometimes it is easier for Polish start-ups to make a presence on worldwide markets rather than focus on acquiring customers only in Poland." In turn, according to a report by DELab and the Polish Business Roundtable, successfully applied new technologies can cause a yearly increase of 0.1-0.2 per cent in GDP.

Real innovation is difficult, costly and time-consuming. The average investment period in Venture Capital funds is 7–9 years. This gives the right perspective in the context of corporate expectations from innovation where 24 months is the maximum period tolerated by Excel. Understanding the changes in the economy due to digitisation is the foundation for the necessary cultural change in an organisation and, as a result, for intelligent innovation management.

3. Education

Digital economy is based on knowledge. Competences are of key importance here. One of Poland's strengths is definitely the access to talented graduates of technical universities, engineers, IT and user experience specialists – highly important for the development of the FinTech industry. Polish programmers are considered to be one of the best in the world, according to this year's ranking prepared by HackerRank. However, they are often treated as skilful executors of difficult technological solutions, not as creative entrepreneurs. High level of technological competences in digital economy is not enough – versatility is the greatest asset. Foreign banks set up their data processing centres in Poland. One can risk a statement that we are becoming the "back office" of London Is it a safe strategy, after all? Long-term success lies in creativity in which people will not be replaced by machines in a foreseeable future. That is why cooperation between academic centres and businesses is necessary in order to develop business imagination among students. Technological companies can inspire both young entrepreneurs and big players. Inspiration is among the many roles the technological companies need to play – they need to educate the market on the practical ways of using new technologies, sharing resources, knowledge, and experience. And to show the potential of innovative technologies so that young people can put them to good use. It translates into a close cooperation with national schools (secondary and tertiary education) in order to ensure the supply of competences in specific skill profiles. It is also a matter of adjusting the science programmes and laboratory equipment. The quality of school programmes translates into the availability of specialists on the job market. By observing the dynamics of the development of technological companies in our country, we can predict that competing for the best specialists will be a growing issue for the industry. As pointed out by the World Bank in their "Global Talent Flows" report, Poland is losing the battle for talented workforce. When it comes to the rapidity of losing well-qualified workforce we are second only to India. Brain drain increased by a staggering 115 per cent over a period of 10 years (from 500 000 in 2000 to more than 1mn in 2010).

When it comes to the rapidity of losing well-qualified workforce we are second only to India.

It is not much better at the top executive levels of organisations. The survey on 109 biggest world banks conducted in 2015 by Accenture showed that only 6 per cent of the banks under analysis have people with technological training in their management boards. Only 3 per cent of directors in the surveyed group had technological experience. In 43 per cent of the banks, the board of directors did not include a single person with a background in technology. This shows that educating and supplementing digital competences should start from the top, so that strategic decisions concerning transformation of business are not hindered by the lack of skills to assess technological risks. How can this be done? As indicated by Piotr Bizoń, Senior Analyst at EY, "Incubators, accelerators and corporate VC funds are tools which, if used correctly, can make Poland the hub of FinTech innovation in Central and Eastern Europe and an important player on the global market."

However, this will not happen if we do not educate entrepreneurs on digital transaction technologies. Default attributing the generation of millennials with the competence to apply digital technologies in business is a myth. Young people also need to learn first how to use the emerging technologies in business and only then can they create a start-up. Education should be applied systematically (at universities and academic centres) and in the community. Financing innovative communities with widely accessible targeted resources for the creation of innovative communities seems to be one of the urgent needs of the start-up environment in 2016.

Owing to the foundations formed by competences in IT and engineering, Poland is in a relatively good position in the digital economy based on knowledge. In order to maximise potential benefits, the scope of education should be enriched with practical aspects of new technologies. The programmes of digital education in business, administration and academic centres will translate into an increase in the speed of market transformation and, in effect, the whole economy.

The development of the financial innovation ecosystem is largely determined by greater awareness of the potential and advantages resulting from state-of-the-art transaction technologies among administration and education staff, regulators, and institutions that supervise the sector.

4. Regulatory and supervisory barriers

Rapid development of the FinTech sector forces market regulators and supervisors around the world to redefine their approach to financial innovation as expectations from this market segment are growing dynamically. Traditional financial centres have been transforming into financial innovation centres (FinTech hubs). New centres emerge in the Silicon Valley, Berlin or Stockholm, previously not associated with the financial services industry yet building their strength on developed infrastructure and innovation culture. Innovative activity of companies is

Therefore of crucial importance for Poland to occupy a position of an aspiring centre of innovation is a proactive attitude of regulators and supervisory authorities to create an open and friendly regulatory and legal environment.

a derivative of systemic solutions which function in the economy. Therefore of crucial importance for Poland to occupy a position of an aspiring centre of innovation is a proactive attitude of regulators and supervisory authorities to create an open and friendly regulatory and legal environment. An optimised environment for the development of financial innovation is one which creates proper framework for the functioning of both established financial institutions (such as banks) and start-ups which often create from scratch a product with European or global reach. Identification of factors which hinder the implementation of financial innovation is crucial to be able to propose targeted solutions which will optimise the functioning of this market sector. Barriers are either of systemic nature or refer to specific problems which arise from specific legal regulations.

A factor which is indicated as inhibiting the development of financial innovation is the attitude of the Financial Supervision Authority (Polish FSA) towards new market players. Polish FSA as an institution does not include among its strategic goals support for creation and promotion of innovative solutions. Tasks carried out by Polish FSA include, above all, ensuring stability, security, and transparency on the market, creating market trust and providing protection of interests of market participants. This is clearly visible in a recent Polish FSA publication entitled "Financial Supervision Authority in 2011-2016", which provides an account of actions undertaken by Polish FSA over the last 5 years. It is difficult to find examples of support for financial innovation there.

The reasons are probably complex. Systemic issues are also of importance here. Providing support for financial innovation is not listed as one of the objectives of supervision over the financial market (Article 2 of the Act on Financial Market Supervision). Polish FSA does not have such a task defined directly either. Article 4 (1) (3) talks only generally about actions aimed at the development of the financial market and its competitiveness. This in turn translates into the concentration of the supervisory authority solely on the statutory objective, which is ensuring stability. This is of utmost importance for creation of a sustainable and innovative financial sector, yet it will not be sufficient.

Apart from that, the Polish supervisor has limited powers to issue binding regulations. The Financial Supervisory Board (Polish FSA) issues prudential regulations which resemble normative acts, yet they are not considered to be acts of commonly binding law, as stipulated in the Constitution of the Republic of Poland. In practice, Polish FSA sees itself as a supervisor, not a regulator. Recommendations issued by Polish FSA are not considered to be acts of commonly binding law, although in practice they are of great significance and are respected by market players.

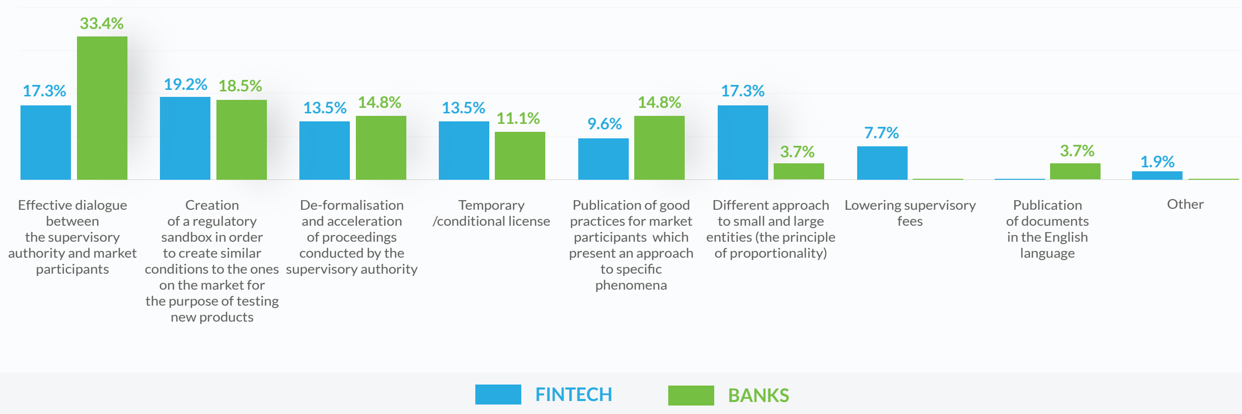
REPORT EXPERT
Jacek Czarnecki, Wardyński and Partners

A significant barrier to the development of financial innovation in Poland is the stance of the supervisory authority, according to which the function of market stimulation and improving its competitiveness is secondary to other objectives of the supervision, mainly to ensuring system safety.

Binding financial regulations are adopted as acts of law or regulations, which makes the process of their amendment inflexible and rather difficult. Extending Polish FSA's powers to issue binding regulations could improve the process of regulatory response to market developments and adoption of regulations which answer to the rapid technological development. From a constitutional standpoint, however, it might be quite difficult.

However, extending legal objectives to include activities to advance financial innovation may form the basis for pro-active and friendly approach to innovative payment services.

WHICH OF THE FOLLOWING MECHANISMS SHOULD BE CHANGED IN ORDER TO IMPROVE THE DEVELOPMENT OF FINANCIAL INNOVATION IN POLAND?



Both banks and start-ups expect changes in the way the supervision in Poland is exercised. As emphasised before, the highest number of respondents pointed out to the need for a more effective dialogue between the supervisory authority and the members of the market. Almost 19 per cent of respondents from both sectors expect the establishment of a regulatory sandbox – a solution which will allow entrepreneurs to test new products safely, without the need to meet all regulatory requirements. Quite importantly, both start-up entrepreneurs and well-established participants of the financial innovation market, including banks, express the need for such a mechanism to be created. Entrepreneurs also expect the proceedings conducted by Polish FSA to be less formalised and faster. They also expect good practices for market participants to be published in a mode similar to guidelines published by the supervisory authorities abroad, e.g. in the United Kingdom.

Lack of support and dialogue between the supervisory authority and supervised entities.

A supervisory barrier which should be changed in the respondents' opinion is the lack of a systemic solution for the representatives of the supervisory authority to offer support in finding appropriate legal qualifications for an activity and to provide support in a potential licensing process. It seems that proper organisational changes to the financial regulator are necessary in order to ensure effective support for financial innovation. Examples from abroad show that special units (departments) are formed solely for the needs of FinTech (cooperation with companies in this sector etc.).(cooperation with companies in this sector etc.).

Lack of cooperation causes misunderstanding of the needs and of the changing business and society circumstances in which the financial institutions of all the parties involved operate. a tight regulatory collar caused by a mistrustful approach to modern technologies and new sales and communication channels result in marginal cooperation and, as a result, in marginal activity of the ecosystem of financial technologies in Poland.

The need for a regulatory sandbox

Respondents also pointed out the lack of a regulatory solution which would enable introduction of state-of-the-art products to the market on a trial basis for the purpose of analysis of opportunities and risks they pose. Currently there is no possibility to offer a product which would be marked in a special way and offered meeting only limited legal requirements (organisational, capital, personnel or informational ones). a detailed description of solutions proposed with regard to the establishment of a regulatory sandbox has been included in the section devoted to recommendations for solutions which should be applied in Poland.

Excessive length and formal requirements in licensing procedures

In the respondents' opinion, one of the main regulatory barriers to the development of the FinTech sector in Poland is excessive length and complexity of the procedures for obtaining from the Financial Supervision Authority (Polish FSA) authorisation to provide payment services. Such procedures usually last more than 9 months, while in other countries the complete process can be as short as 3 months. The delay is often caused by the applicants but also by the lack of regulations which would obligate Polish FSA to indicate in the first letter addressed to the applicant (which is sent to applicants within 2 months) all the matters which according to the supervisory authority require supplementing. Instead, the currently applied practice it to advise that the requirements referred to in the letter are not complete. Adoption of such a solution would allow for completion of the licensing procedure within 3–4 months, which would actually reduce the time needed for obtaining an authorisation by half. In the business plans of the FinTech sector a period of 9–12 months to commence provision of services is much too long.

The licensing procedure is also highly formalised. In practice, a small entity with limited human and financial resources is unable to obtain the supervisor's authorisation to begin activity, which often leads to migration of business activity abroad. In the case of the supervisory authority of the financial market in the United Kingdom,

REPORT EXPERT
Jan Byrski, attorney-at-law and partner at Traple Konarski Podrecki and Partners.

We should strive to make Poland the country of first choice for entities which intend to provide innovative payment services in the UE, thanks to the simplicity of procedures, the time needed to obtain a Polish FSA license and the supervisory fees.

entities are actually encouraged to apply for an authorisation to conduct business activity as a payment service provider. The supervisory authority addresses the market expectations by supplying entities with a detailed description of the requirements they need to meet and with a description of the licensing process. There are situations in which a Polish entity is refused a license by the supervisory authority in Poland but easily obtains a license to carry on activity as a payment or electronic money institution in another member state and then provides such services in Poland on the basis of a European passport.

Information and education policy

Informational activities of the financial regulator are also of significance. Market participants point out the lack of sufficient knowledge of the regulator's approach to various issues relating to financial innovation. There are also no informational activities conducted by public institutions, which makes the interpretation of financial regulations difficult. There is also a lack of relevant communication in English, which would serve as major assistance for foreign entities intending to begin their activity in Poland.

The FinTech sector is especially sensitive to the issues of interpretation of regulations and the evolution of the approach of public authorities. The financial supervisor should inform the market in a relatively open way about their position towards the application of financial regulations, even if their position is not legally binding.

A large number of the respondents also admit that the lack of knowledge on financial technology is a significant barrier. In their opinion, the whole market suffers from through the general lack of knowledge on the sector. This may indicate that the market's discrepancy between the demand for and supply of innovation is caused by the lack of effective communication. Another issue may be the lack of precise market expectations caused by the lack of systemic information on financial innovation which is gathered in the course of systematic research monitoring development. Possibly both sides have difficulties communicating and collecting knowledge on mutual expectations and possibilities. It seems that in order to overcome the barrier it is necessary to follow the example of the countries which support the financial innovation market; to include a third party which would function as a bridge between the two sectors, to create a platform for dialogue which would facilitate the operation of market.

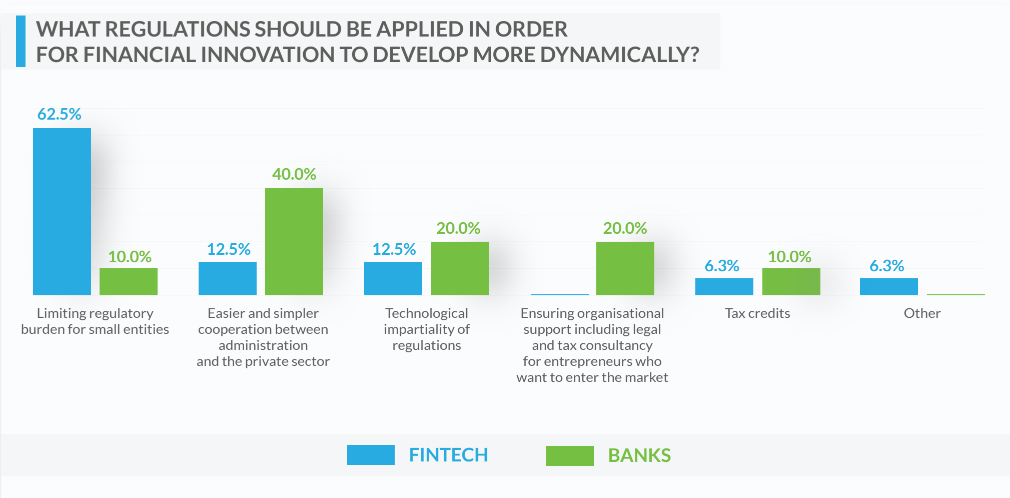
Interpretations of the Financial Supervisory Authority

As has been pointed out in the survey that the mode of obtaining interpretations issued by the Financial Supervisory Authority needs to be regulated. Respondents pointed out the need to consider the possibility of modifying the procedure similarly to the procedure for issuing binding tax interpretations. In many cases the provision of innovative financial (payment) services is based on exemption from the law on payment services. Exemptions result from the provisions of the Payment Services Directive but their implementation is not precise. When providers start their innovative activity in the provision of payment services, they need to be sure whether their activity is subject or not to the provisions of the act and, as a consequence, whether it is necessary to obtain Polish FSA's authorisation to perform such activity or not. Application mode, response time and legal consequences of exceeding the time by the Financial Supervision Authority should be regulated in the Act on Financial Market Supervision. Conducting business activity without a license is punishable not only by administrative but also penal law sanctions. Therefore, certainty in the scope of legal regulations is crucial to the FinTech industry. Unfortunately, currently Polish FSA interpretations are not binding and sometimes are even contradictory to the opinions issued by the Ministry of Finance in individual cases (which are not binding either).

Costs of financial supervision

Another barrier for the supervised entities is the high cost of supervision and complicated rules of calculating said costs. The problem has been recognized by the national regulator and relevant changes have been introduced into the draft law amending the act on payment services and some other acts and being in the final stage of legislative process.

There are also no rules for financing the supervision over entities which begin their activity, no system that would grant temporary preferences for innovative entities. The Polish system of financing the supervision is uncompetitive in comparison to solutions applied in other member states and results in migration of financial institutions from Poland to other jurisdictions and operation in Poland via branch offices or across the border.



The need to limit regulatory burden on small entities is listed among market participants as one of the key priorities which are necessary to ensure dynamic development of financial innovation. In practice, this means application of the principle of proportionality. Entrepreneurs also expect simplified and more effective cooperation with the administration, which should be interpreted as the need for better relations with the regulator and the supervisor. Interestingly enough, both for start-ups and banks tax incentives are of secondary importance.

Wider application of the principle of proportionality

Market participants expect a wider application of the principle of proportionality in the activity of public administration relating to them. Application of the principle would result in selection of adequate means to achieve a goal. Polish FSA would be able to apply reduced requirements to entities which conduct their innovative activity on a small scale. The obligation to apply this principle should be clearly stated in the Act on Financial Market Supervision and in specific regulations.

Currently, except for a few exceptions, all entities intending to carry on business activity which is supervised by Polish FSA are obliged to meet rigorous legal requirements (personnel, capital and organisational ones), regardless of the scale of their business. Such limitations may violate the principle of proportionality which orders application of the least severe limitations necessary to achieve a given goal, depending on the scale of an entity and the risk involved in its activity.

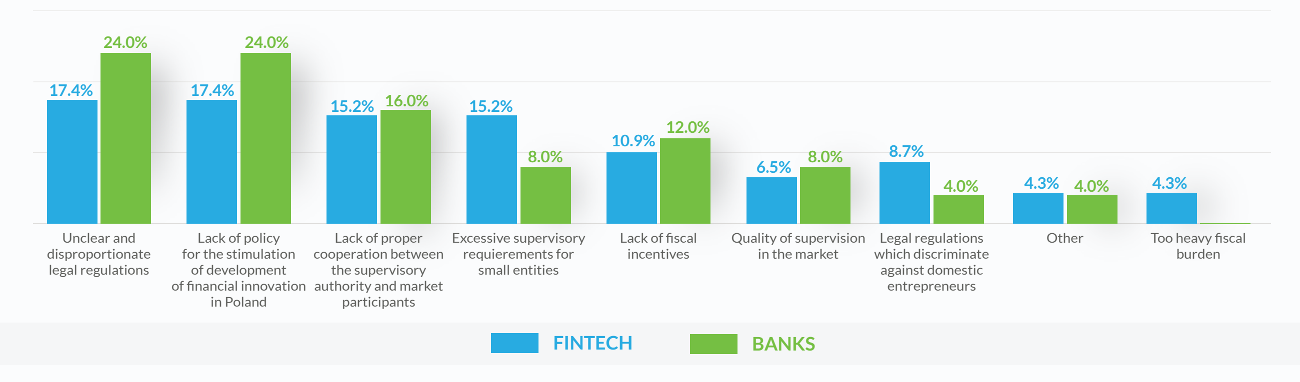
Lack of reduced requirements for small providers

The Act on payment services (although it is permitted by PSD under national options) does not provide for wide exemptions in licensing requirements for providers with a limited scale (except for entities providing money transfer services in the territory of Poland). This means that requirements for entities with an established market position providing services to a wide range of customers are the same as for entities which are just entering the market not posing much risk. What is more, their products are very often based on solutions offered by other market participants. Some statutory requirements, including the obligation to introduce organisational solutions with regard to risk management in the services, are extremely difficult to meet for newly formed entities, especially when the scale of their activity is marginal at the initial stage and their staff comprises just a few members.

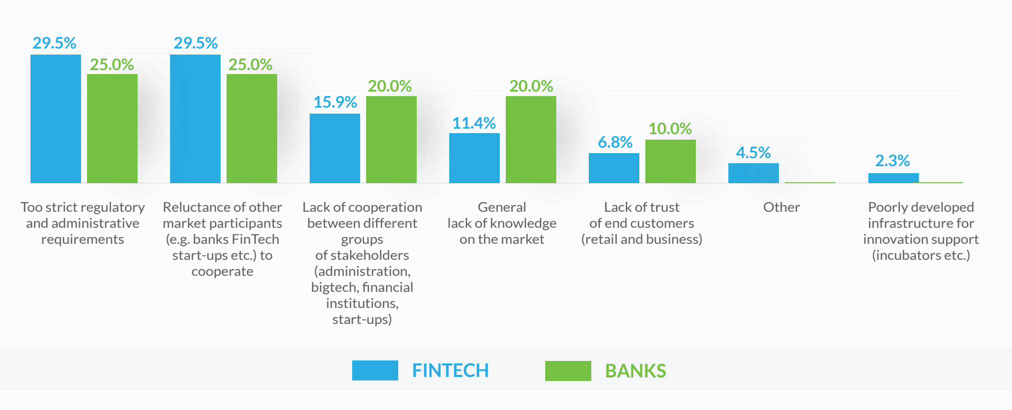
Access to data processed in public registers

It should be recommended that as for cooperation between the private market and the administration, changes should be introduced with regard to access to data in public registers so that the data are easily available and used as part of innovative services provision by entities in the financial innovation sector, including banks. Openness in this respect declared by the present administration sounds very optimistic, however, the current regulations do not allow sufficiently the use of data processed in public registers for the needs of business purposes so as to significantly improve the level of transaction security both for entrepreneurs and for citizens. Currently applicable regulations in this regard do not meet the expectations of the market and of the citizens. Openness and computerisation of access to public data not only boosts turnovers but also leads to a reduction of costs and time both for citizens and the country. As shown on the example of some EU countries, open access to knowledge and public data significantly contributes to the economic growth and creation of new branches of the innovative financial market (e.g. Denmark, Estonia, Sweden).

WHAT ARE THE MAIN LEGAL BARRIERS TO THE DEVELOPMENT OF FINANCIAL INNOVATION IN POLAND?



WHAT ARE THE MAIN BARRIERS TO THE DEVELOPMENT OF FINTECH SECTOR IN POLAND?



The most frequently indicated barriers which influence the development of financial innovation were: unclear and disproportionate legal regulations and a lack of policy for stimulation of the development of financial innovation in Poland. Non-transparent regulatory ecosystem and the resulting uncertainty with regard to the attitude of the supervisory authority or other market regulators in individual cases translate into a high risk of business operation. Lack of clear interpretations, uniform guidelines for market participants or "soft law" for emerging technologies additionally exacerbate the issue. Under the current circumstances conducting business activity on the market of financial technologies in Poland is burdened with a relatively higher risk in comparison to other EU member states which consider the development of financial innovation an economic priority. Today the sector is not considered to be strategic in Poland.

This affects not only the dynamics of the increase in the number of start-ups but also the cooperation of the existing innovation entities with banks and other financial institutions. Despite declarations of their will and need to cooperate with FinTech start-ups, banks approach them with caution. To some extent, this is a result of limited trust in new solutions or a different business culture. However, banks are additionally limited by regulations on outsourcing, among others.

IDI RESPONSE - BANK

Regulatory barriers, a grey market of some sort, lack of clear stance on FinTech – looking at the market, FinTech companies do not know how banks work. It is difficult to agree with Polish FinTech companies on their view of business and banking.

Implementation of the EU law and interpretations applied by the supervisory authority

Another barrier of regulatory nature faced by representatives of the industry in their operations is imprecise or too strict implementation of the EU legislation. Especially dangerous is the so-called goldplating – adopting solutions which go further than it can be expected from the implemented EU law. Another problem occurs when the implementation is correct, but the interpretation of the supervisory authority causes a significant change to the functioning of a product.

An example of a situation where the supervisory authority interprets a legal institution in a way that puts domestic providers in a less favourable position than entities from other member states is Polish FSA's attitude towards electronic money. The stance of Polish FSA, according to which pre-paid cards issued by banks in Poland should not function within the legal regime of electronic money (due to the fact that they are not issued in a closed loop system, among others) is in conflict with the solution adopted in other member states which have implemented the EMD2 directive (2009/110/EC). In most of the member states the implemented provisions of the EMD2 directive apply to pre-paid cards and allow for issuance of anonymous pre-paid cards or for application of simplified financial security means with regard to customer identification. This applies to the United Kingdom, Austria, Portugal, Spain, Slovakia, Romania, the Czech Republic, France, Belgium, and Italy, among others.

It is surprising that despite the implementation of the same directive by the said member states in their respective legal systems (including the definition of "electronic money"), the conclusions drawn by our supervisory authority and supervisory authorities of the member states with regard to the classification of pre-paid cards as electronic money can be so fundamentally different. As a result, providers of payment services in Poland were forced to suspend issuing pre-paid cards and providers from other member states, who conduct cross-border business activity and therefore are not effectively bound by the conservative interpretation of Polish FSA, have entered the market.

Inconsistent positions of various authorities

Another problem that has been indicated are inconsistent stances of regulators and supervisory authorities. This applies in particular to inconsistent interpretations of the Financial Supervisory Authority (Polish FSA), the Ministry of Finance (MF), the Office for Competition and Consumer Protection (UOKIK) or the Inspector General for Personal

Data Protection (GIODO) with respect to innovative technological solutions. As stated by Dariusz Czuchaj, Senior Associate at Dentons, "in many cases inconsistent stances of the regulators and supervisory authorities with respect to innovative technological solutions make it impossible to take a business decision or to conduct business activity in an effective way." It is necessary to form an advisory and coordinating body dedicated to the needs of financial innovations comprising members delegated by the organisations above. The main task of such a body would be to conduct uniform policy relating to the FinTech sector.

Excessive reporting requirements

A significant barrier is created by extensive reporting requirements, also those concerning the proper form of the reported information in the place of an analysis conducted by the supervisory authority. For example, the provisions of the Act on payment services provide a list of report requirements to be implemented by institutions which are subject to regulation, at the same time delegating a portion of duties which should be fulfilled by the supervisory authorities themselves. These include, for instance, quarterly information aimed at the determination of the position of the entrepreneur but also the whole payment services market. Although at a significant cost, gathering of such information is not a major barrier for big enterprises. However, it is a strain on money and time for micro-enterprises.

Heavy sanctions

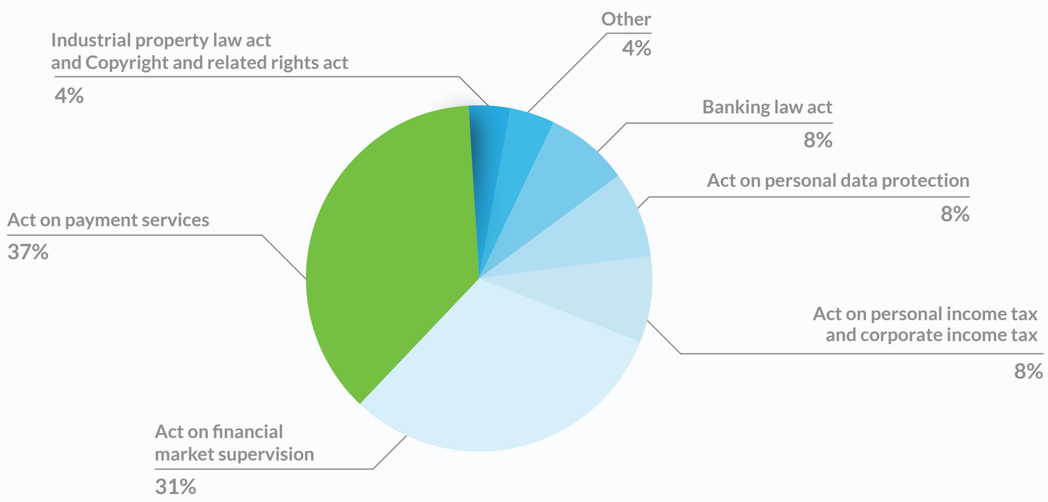
An important limitation is created also by criminal sanctions laid down in specific acts of law which can be applied to innovative entities. Very often the presence of such sanctions without precise limitations in their scope may result in greater aversion to risk involved in innovative activity.

Findings of the survey regarding the FinTech market in Poland point to three major barriers to its growth: lack of new knowledge on emerging financial technologies; ambiguous regulations and lack of binding interpretations made by the supervisory authority, which translates into higher business risk; lack of incentives for innovators on both sides of the table (both banks and start-ups).

Detailed regulations

According to the respondents, the source of regulatory limitations which have the strongest impact on the market stem from the Act on payment services and the Act on financial market supervision.

WHICH REGULATIONS SHOULD BE CHANGED FIRST?



Outsourcing of crucial bank activities

Banking law excludes the possibility to limit the liability of entities providing services to banks, although such a restriction is not commonly applied in other member states. EU regulations do not allow financial institutions to limit their liability when outsourcing. The Polish legislator has extended this provision to include also providers of services for banks. Such an extension of liability limits market development. As pointed out by the respondents, the ban on contractual limitation of the outsourcing party's liability prevents the banks from fully utilising cost-reducing innovative services such as cloud computing services.

Outsourcing of payment services

Outsourcing of payment services for domestic payment institutions is an area which requires regulation in accordance with the EU legislation (e.g. PSD2). The domestic regulations should also allow sub-outsourcing in payment activities. In the case of many innovative payment services offered by Polish payment institutions it is assumed that a part of the activities is carried out by third parties on behalf of the domestic payment institution. a lot of projects, for instance in IT services, presume the use of further providers. Regulating the possibility to use further outsourcing partners would benefit the development of innovative financial services in Poland.

Barriers found in the Act on protection of competition and consumers

The Act specifies clearly that the use of provisions which may be considered abusive under Article 3851 (1) of the Civil Code is prohibited in consumer agreement forms. When innovative products are brought to the market effects of contractual provisions are not easy to assess. Such an assessment can be done only after a few years due to technical and technological progress. What is important, in the course of inspection an abusive contractual clause is deemed invalid from the commencement of the contract (several or several dozen years back). Currently there is no legal basis to effectively remove such provisions (the client's approval is always required) and a potential entry of the clause in the list of abusive provisions results in a considerable loss of image of the enterprise, i.e. unjustified deterioration of the perception of the company by its potential clients. Currently there is no possibility to have a contract form checked in advance by the Office of Competition and Consumer Protection for abusive clauses. There is also no list of model contractual provisions without which are recognised as being in line with the applicable provisions of law.

The act also provides for the obligation of the entrepreneur to research the suitability of the financial product for the needs of the client based on the information on the features of the clients available to the entrepreneur or to offer services in a way which is inadequate to the features. Such a provision may be applied in classical financial services, however, it seems inadequate for innovative financial services, which are addressed to people who are looking for such solutions voluntarily.

Rules of personal data processing

One of the most important barriers indicated by the entities in the financial innovation market in Poland with regard to personal data processing are: limited grounds for data processing (provided by Article 23 (1) (1-5), including explicit consent and performance of an agreement), far-reaching reporting obligations; too broad definition of personal data (any information, direct or indirect, referring to an identified or identifiable natural person); and also a broad definition of sensitive data, processing of which requires a written consent. It should be noted that very often personal data is the fuel for start-ups, e.g. p2p lending portals whose essence is data analysis. a significant barrier from the point of view of the financial innovation sector is treating data of sole traders (despite the revision of some regulations, not all doubts have been removed), employees of companies holding specific functions and members of authorities as data which is subject to the same protection as personal data of consumers.

Equally important in the age of free movement of data is the limited possibility of transferring personal data to third countries, which makes it difficult for modern information society services of cross-border character to function and is one of the causes of entrepreneurs' migration abroad.

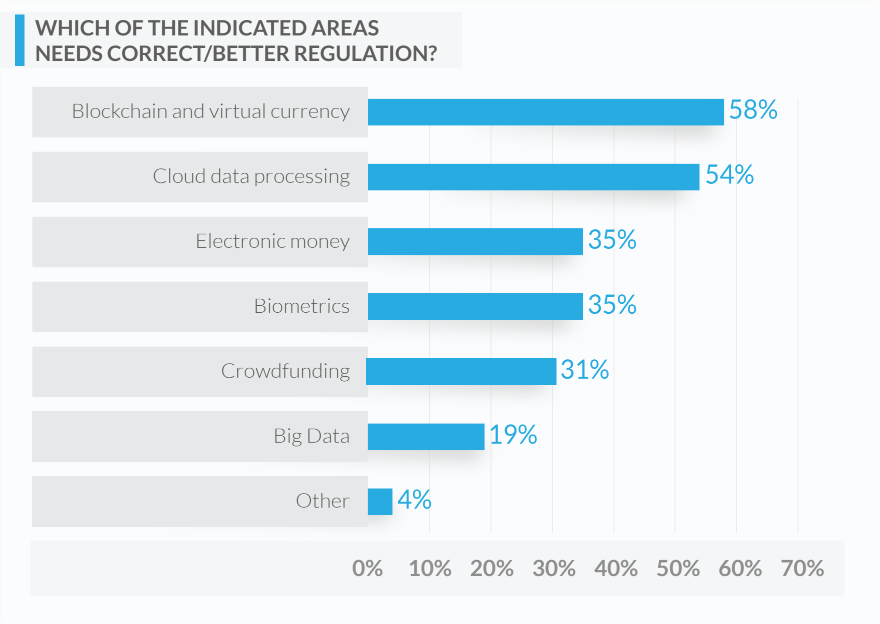
Provision of online services

Provisions of the Act on online services protect equally both consumers and business users from receiving unsolicited marketing information. The possibility of effective support of communication between business entities is hindered by regulations which are aimed at limiting cumbersome practices against consumers. Taking into consideration stimulation of innovative financial services, so-called opt-out solutions should be introduced (information can be sent unless the recipient disagrees).

Mutual insurance and insurance activity

The idea to use solutions from the field of financial innovation to organise social networks of mutual insurance is gaining more and more popularity (e.g. mutual insurance of bicycles or electronic devices). It should be noted that the Act on Insurance and Reassurance Activity of 11 September 2015 imposes very high requirements on entities planning to carry on insurance activity, both formal (obtaining a license, the legal form of a joint-stock company or a mutual insurance association) and capital ones (minimum share capital from PLN 2 500 000.00 to PLN 3 700 000.00, depending on the type of activity). At the same time the only exception from the said requirements is the option to conduct business activity as a small mutual insurance association (an archaic formation reserved basically for self-governments of professional organisations) or a small joint stock company. Therefore, the possibility to organise mutual insurance by natural persons (entrepreneurs, social or trade associations) is very much limited and any bottom-up initiatives are forced to obtain a protective umbrella from existing insurance associations.

Identification and removal of barriers is a prerequisite, but it will not suffice if Poland wants to make the vision of a regional centre of financial innovation a reality. In order to do so, the systemic regulations and solutions adopted in Poland should be of proactive and model character. Permanent monitoring of legal regulations and solutions of institutional character are necessary not only in other member states of the EU but also in global FinTech hubs outside Europe (Singapore, Hong Kong, Australia).



The survey clearly indicates that market participants expect more legal stability. The areas which especially need it are: the blockchain technology, cryptocurrency (more thorough education of the market is expected) and cloud data processing. Banks also indicate the need for proper regulation of electronic money, treated in Poland more rigorously than in other member states.

Cryptocurrency

Cryptocurrency such as the commonly known bitcoin or ether, now gaining more popularity, have not been subject to any regulatory provisions yet. In practice the only official documents which address cryptocurrency (bitcoins, to be exact) are a number of tax interpretations which instruct to treat cryptocurrency as economic rights, which implies an obligation to report income only at the time of their exchange to "traditional" currency, either national or foreign. Lack of binding regulations cannot be considered as unconditional approval of the use bitcoin or ether. Warnings have been given by supervisory authorities about the uncertainty of cryptocurrencies and their potential use for violation of law (e.g. warnings issued by the National Supervisory Authority and General Inspector of Financial Information of 2014 on their suspicion of using bitcoin for violation of law). Thereby, out of caution, many entities in the cryptocurrency sector move their operations outside Poland in order to limit the legal risk of their activity becoming illegal or covered by regulations imposing excessive requirements.

Crowdfunding

An example of activity which requires specifically developed regulations are the so called crowdfunding platforms which enable collection of funds from mainly private donors for entities which pursue certain social, cultural or technological objectives. In most cases the scope of activity performed by a platform including accepting, storage, and transfer of funds and meets the definition of payment services under the Act on Payment Services. In principle, performance of such activity, in accordance with the Act on Payment Services of 19 August 2011 (namely of 29 August 2016, Journal of Laws of 2016, item 1572) requires a license issued by the Financial Supervisory Board. a license is issued following a complex administrative procedure, provided that specific requirements, including capital ones, are met (tier 3 capital; the full payment activity may be provided by an entity with share capital of EUR 125 000). Platforms utilise a range of solutions which allow them to provide payment services (acting as a service bureau or a crowdfunding agent), however, these actions do not guarantee full certainty as to their "legality".

REPORT EXPERT
Artur Granicki, attorney-at-law, partner at SGP Legal

A dedicated regulation for the activity of crowdfunding platforms would be an example of a proactive approach of the state to reinforcing the Polish FinTech sector.

Peer to peer lending

Peer to peer banking, also referred to as "social banking", involves creditors and lenders, most often natural or legal persons, who do not operate in the field of financial services but are connected by third parties (p2p platforms). Similarly to crowdfunding platforms, such entities operate on the fringe of regulated payment activity and, in some cases, may be considered para-banking institutions. Therefore, the functioning of p2p platforms carries a high degree of legal risk which significantly hinders their development.

CHAPTER 3.
COOPERATION AND SUPPORT MODELS FOR THE FINTECH ECOSYSTEM

1. Cooperation models for FinTech ventures and financial institutions in Poland and all over the world

The FinTech company sector is booming. According to a report titled "The Future of Fintech and Banking" by Accenture, global investment in financial technology ventures amounted to $2bn in 2010 to hit the figure of $12bn in 2014. In 2015, the figures already stood at over $15.5bn. Yet it is possible to prove conclusively with hard data that there is still a disparity of scale between the FinTech sector and traditional financial institutions. It may seem that posing questions as to whether the FinTech sector may shake up traditional banking is still unfounded. Development of the FinTech sector has indeed caused financial institutions to re-imagine their strategies of attaining competitive advantage. According to the 2015 EFMA-Infosys Finacle Innovation Survey study, in 2009 37% of global banks saw innovativeness as a source of their competitive advantage, whereas in 2015, the figure stood at a staggering 73%. Global market examples show that the sector is not waiting for the situation to develop but is seeking to participate actively in the new developments by embracing various strategies.

REPORT EXPERT
Bartosz Wolny, Bank Zachodni WBK

FinTech ventures have the potential to become catalysts for more rapid developments in banking. On the one hand, with the development of tools and processes that support these institutions' efficiency, digitalization of processes, and new services for banks customers, FinTech ventures can become banks' natural partners. On the other hand, the new ventures are also new players in the market that cause banks to reshape their way of thinking and operations.

Analysing the global FinTech sector from the viewpoint of banks' and financial institutions' commitment, we can highlight seven core cooperation models, and then group them in three equal strategies: **establishing contacts** with FinTechs, **cooperation** with FinTechs and **investment** in FinTechs.

INNOVATION LABORATORIES

Financial institutions create or are partners/sponsors of special physical spaces—ecosystems combining FinTech start-ups, technologies, partners, and investors which enable cooperation with entrepreneurs and financial specialists. a good example in Poland is the Alior Bank Innovation Lab and the Coinfirm.io Blockchain Lab. In the Netherlands, ING partners with the Erasmus Centre for Entrepreneurship. Also, an interesting model has been adopted by the Turkish TEB Bank, which has provided young tech companies with Innovation Campus to promote innovative enterprises.

Igor Zachariasz, Innovation Lab manager, Alior Bank: “Since July 2015, our bank has had an interdisciplinary team that manages innovation introduction. It is called the Alior Innovation Lab. The team is tasked with searching companies and solutions in the market to help the bank fulfil its strategy. One of the priorities of the Innovation Lab team is to cooperate with start-ups. We are extremely open to implementing joint projects. We are now seeking biometric, artificial intelligence, blockchain, and API management solutions, with the last one being significant in the context of the PSD2 Directive. Our model of cooperation with start-ups provides for joint implementation of pilot projects, and the creation of a ready solution once certain defined success (both technical and business) criteria are met. Based on our experience, we believe that such an approach produces mutual benefits. Start-up gain access to a large pool of customers, and Alior Bank is provided with innovative solutions that improve its operations and raise customer satisfaction.”

HACKATHONS AND APPLICATION COMPETITION

A quite popular form of engagement on the part of financial institutions in the FinTech sector is organizing short (one- or two-day) meetings for programmers and application developers during which they create innovative sector-related projects. In the Netherlands, Rabobank partners with Dutch FinTech Hackathon, and ING cooperates with Multiple Hackathons.

EXAMPLE FROM THE MARKET

DUTCH FINTECH HACKATHON

Team Paygel won the first Dutch FinTech Hackathon. In only 48 hours, the team developed a service to make Internet payments faster and more secure. The winners received a reward of 5000 € and were given the possibility of taking part in an UtrechtInc accelerator programme.

COOPERATION

Financial institutions establish partnerships with technological companies or financial institutions to come into contact with the FinTech ecosystem. Banks and FinTech ventures mainly cooperate in the area of new payment methods and digital marketing. ABN AMRO, a Dutch bank, collaborates with over 15 FinTech ventures. This model is also the most popular in Poland. As assessed by Paweł Reichelt, who is the E-Banking Director at Plus Bank, "We are entering a new stage in the development of financial services. As a result of cooperation between FinTech ventures and banks, customers will soon be able to benefit from cutting edge services that combine the world of the freshest solutions, mainly mobile, with banking." Information gathered during research shows, however, that this cooperation is a current business practice for many institutions, for instance for a quite specific sector of collective banking whose representatives still find the analogy between the nature of their activity and the closely defined FinTech sector. "Cooperative banks have proved more than once that they can pioneer in the implementation of technologies e.g. Europe's first biometric finger vein solutions were implemented by Bank Polskiej Spółdzielczości and Podkarpacie's Bank Spółdzielczy (now as many as 50 banks from both collective banking groups have implemented biometric solutions), and recently an increasing number of banks enable HCE technology mobile payments. Thus FinTechs and collective banks have quite a lot in common – they are able to reach customers fast and meet their expectations, they take their decisions locally, a behaviour that reduces their lead time and proves their openness to innovative technologies. It is therefore hardly surprising that cooperative banks approach the FinTech sector in an open and partner-like way and they are sure to prove that they can pioneer in new technology implementation," says Daria Pawęda, who is the Director of Mobile and Internet Banking in Bank Polskiej Spółdzielczości. However, certain conditions are specified to optimise the nature of such cooperation. Such diagnosis of the situation and development forecasts are proposed by Małgorzata Jarczyk-Zuber, Innovation Driver, ING Group, and Director of the ING Bank Śląski Innovation Centre: "Cooperation between FinTechs and banks still requires creation of a suitable ecosystem. Unfortunately, in Poland it is still pretty poorly developed and there are relatively few FinTech start-ups in the market. Recently, there have been more and more FinTech support initiatives. These include acceleration programmes, incubators, and new financing sources. For this reason, I expect the situation to change soon. Deregulation of the banking sector (through the PSD2 Directive) also holds a lot of promise."

ACCELERATORS

An accelerator is a collaborative space in which FinTech venture employees develop their own projects within several weeks, having access to invaluable insights and using both hard and soft skills of financial institutions. Banks such as Barclays together with Techstars, as well as international payment organizations conduct their own accelerator programmes. An example is the Start Path Global programme launched by MasterCard in 2014. It was designed to support innovative FinTech start-ups at the stage of scaling their operations. The company selects the most promising ventures from all over the world, and accelerators aim at focussing on rapid and efficient transfer, mainly data analysis and mobile solutions into the mainstream of payment and technological business.

In Poland, too, first FinTech accelerator programmes will be launched soon e.g. a PKO Bank Polski initiative prepared with MIT Enterprise Forum Polska or the D-RAFT FinTech Program for mature projects looking for scale.

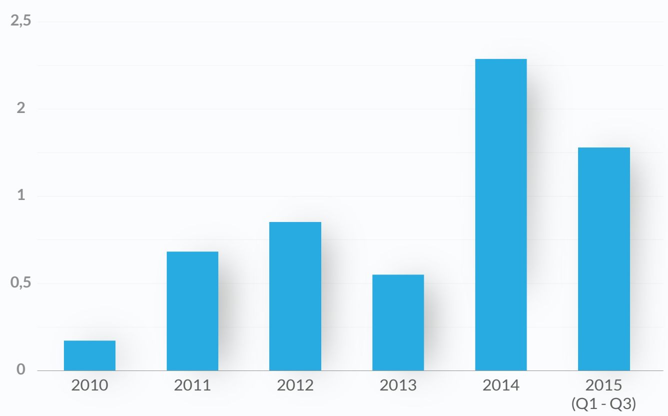
INCUBATORS

It is a collaborative space in which creators of early-stage Fin-Tech start-ups develop their projects in a longer perspective, with access to potential investors. In the Netherlands, ING supports start-ups as part of the ING Lab in Amsterdam, and Rabobank partners with start-up bootcamp FinTech in London and New York.

DIRECT INVESTMENTS

Banks and financial institutions which find themselves under pressure to stay innovative are more and more engaged in investing in FinTech start-ups. According to the Statistical Portal, all bank investments in the sector are expected to reach $19.9bn in 2017.

BANK INVESTMENTS IN FINTECH START-UPS

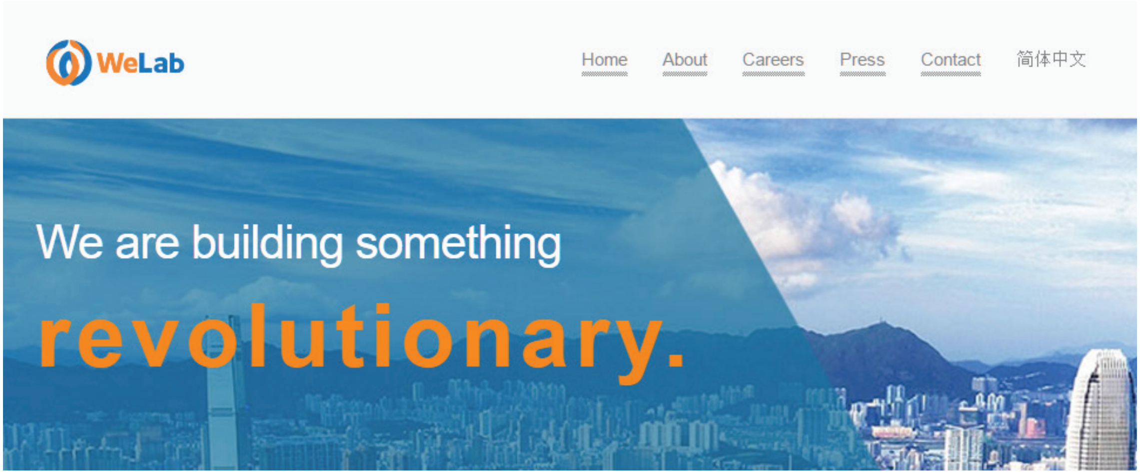


Source: Dow Jones Venture Source / The Wall Street Journal

The formula of corporate venturing is also gaining more and more popularity. It is about a company acquiring shares in a start-up in order to gain a specific competitive advantage. In the Netherlands, ING has invested in for example Kabbage and WeLab, a Chinese direct loan provider.

EXAMPLE FROM THE MARKET

WeLab



WeLab is a descriptor of traditional banking, started in 2013. WeLab maintains Hong Kong's leading on-line lending platform www.WeLend.hk and China's first fully mobile lending platform www.wolaidai.com.

INVESTMENTS IN FUNDS

Financial institutions invest in the FinTech sector through specialized funds. In the Netherlands, Rabobank has created Catena Investments, and ABN AMRO has invested 10mn € in a fund to support FinTech start-ups. Examples of such solutions also include Santander InnoVenture and Citi Ventures.

EXAMPLE FROM THE MARKET

AILLERON CONSDATA FINANTEQ - EXPANSION THROUGH COOPERATION WITH BANKS

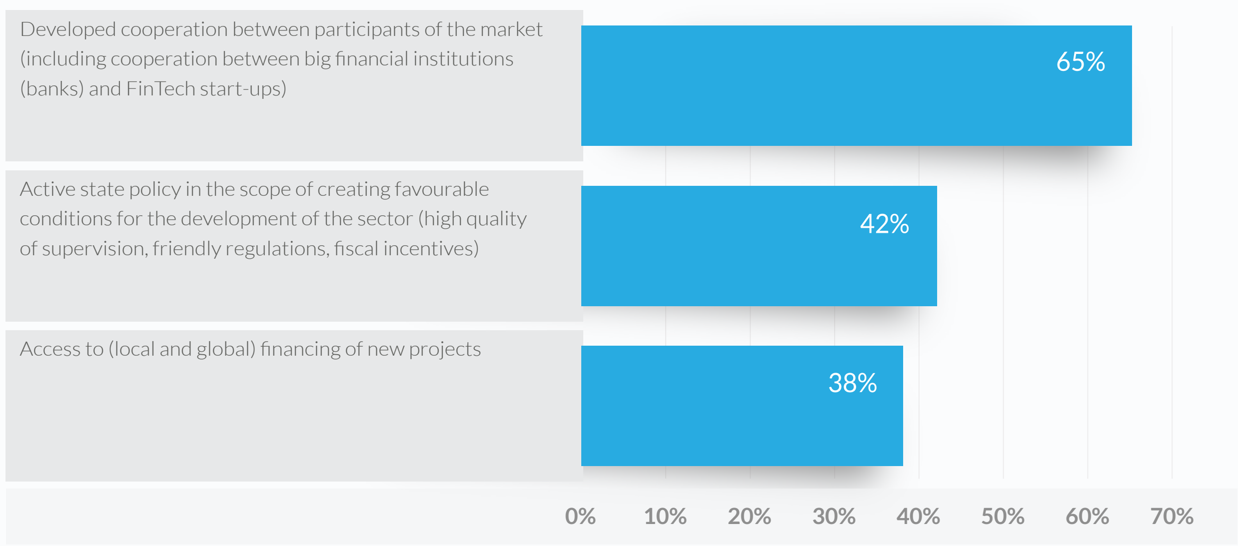
The Polish banking sector is a vibrant incubator of financial innovation. An example of this includes three companies that have been able to open themselves to new activity through cooperation with banks. In several Polish financial institutions, Ailleron has introduced the Livebank system that enables serving multiple clients. CONSDATA has introduced e-applications systems that optimize sales of banking products through the Internet and via a mobile channel, whereas Finanteq, which has evolved from e-Leader, implements entire mobile banking systems and integrated remote payment systems (mCommerce). The successful implementations at home meant that Ailleron and Finanteq were able to take their projects abroad, to Europe and Asia, and CONSDATA was able to carry out projects related both to the state administration and the banking sector (process of application for Program Rodzina500+ benefits through a banking channel).

2. Cooperation models for FinTech ventures and financial institutions – research results

A qualitative analysis of barriers which influence the dynamics of development of financial innovations is supplemented with a study conducted on a valid sample group of start-up companies and banks. Bilateral analysis allowed for a comparison and assessment of the approach of both the groups to the issue of business and legal barriers.

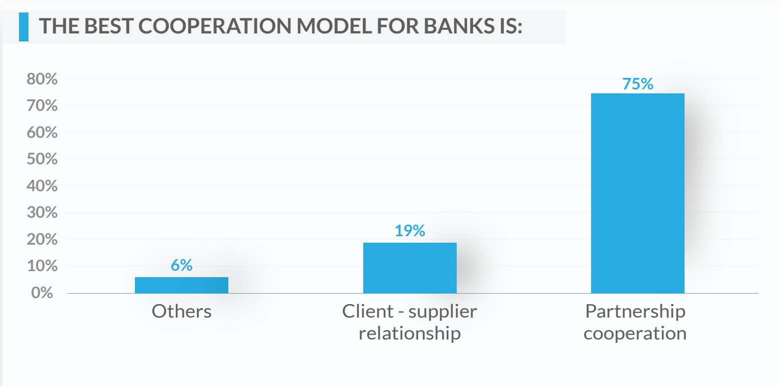
SYSTEMIC BARRIERS

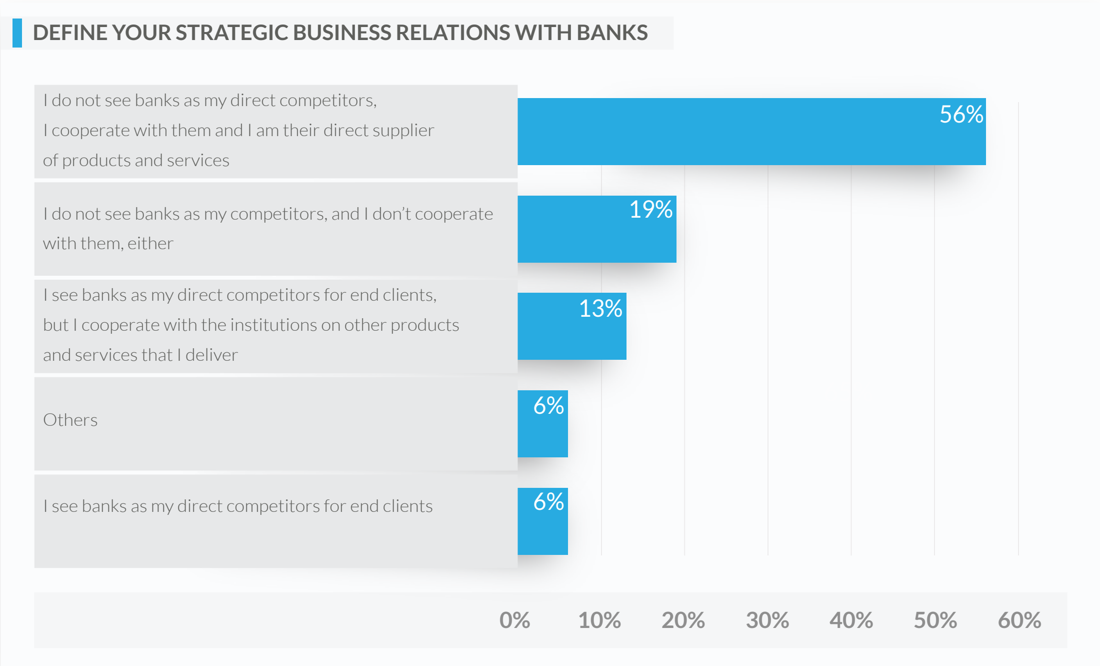
WHAT HAS THE GREATEST IMPACT ON THE DEVELOPMENT OF FINANCIAL INNOVATION? (CUMULATIVE RESULTS FOR BANKS AND FINTECH, N=38)



Banks and start-ups agree on the factors which influence the development of financial innovations. The most important one is well-developed cooperation between financial institutions and start-ups. Start-ups bring innovation to the table, while banks share with their scale of business. Start-ups can focus on the development of their business without distracting themselves with the search for funds to finance their activity, at the same time they can building customer trust on the grounds of cooperation with a large entity. Banks and financial institutions in their cooperation with start-ups benefit from the input of external innovations, which supplement their internal strategic maps of development.

FinTechs definitely prefer partnership as an ultimate model of cooperation with banks. It is understandable, since a partnership approach to cooperation with big market entities allows FinTechs not only to sell and provide their services to banks, but also exchange knowledge, gain experience and acquire contacts that are an engine for future growth and creating new services and products. Moreover, FinTechs adopt a flexible attitude to conducting projects together with banks that enables offering them and their clients custom solutions, and provides start-ups with opportunities to manufacture their products in a secure environment without having to come up with IT solutions themselves, which some start-ups cannot afford to do. Interestingly enough, no start-up cited banks' direct investment in start-ups as a good cooperation model.





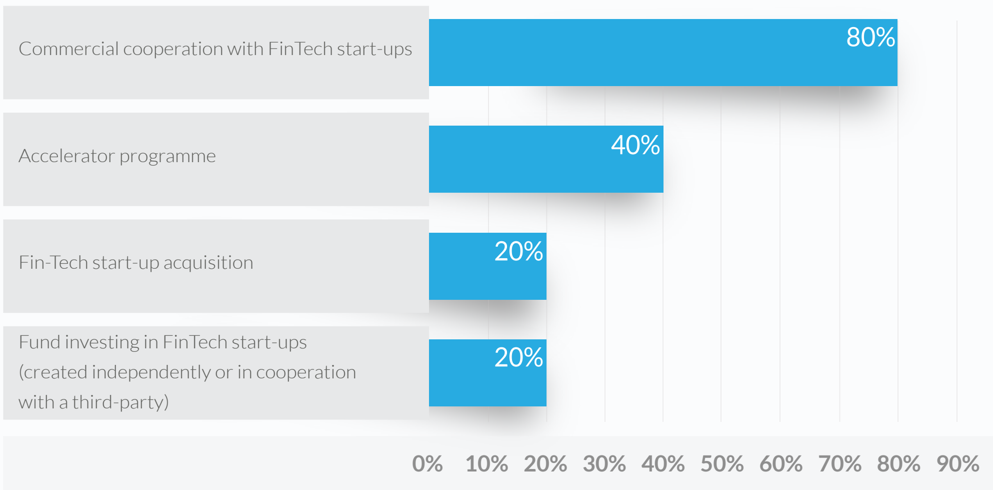
More than a half of the surveyed FinTechs report that banks are not their direct competitors. With the present shape of the financial services market, in which banks still play the most significant role, it would be challenging for start-ups or mid-size enterprises to compete frontally for clients and market position with banks. This may change after the PSD2 Directive has come into effect, which will allow FinTechs to provide customers financial services related to the funds accumulated in their accounts. When access to customers' funds ceases to be a problem, it may turn out that it is a company's ability to customize

IDI RESPONSE - FINTECH

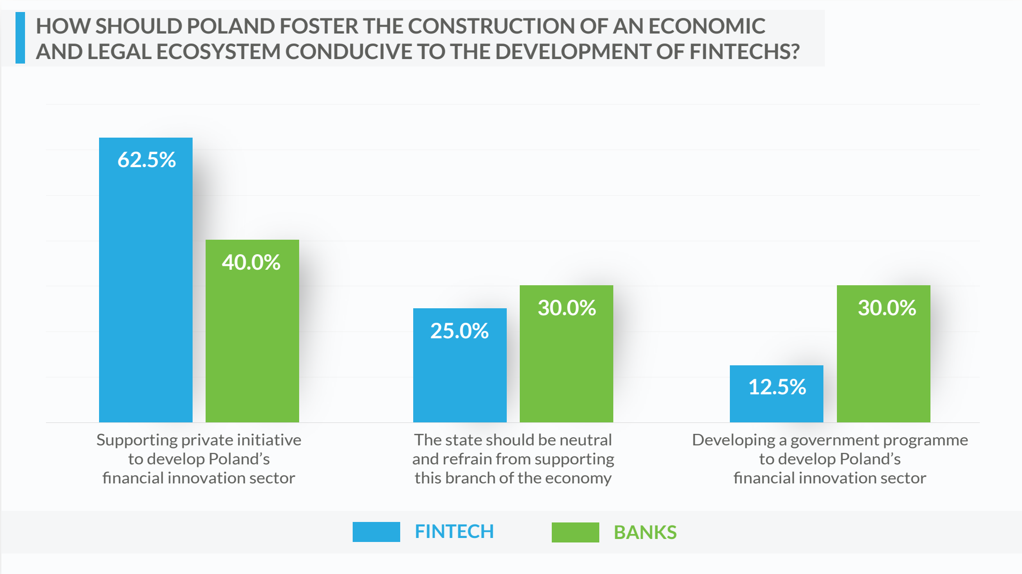
We are listening to our clients. We identify a niche in which banking solutions are poorly recognized (real property market). Thanks to IT development, we have been able to enter the niche and appear interesting to banks thanks to excellent figures. We also try to integrate with and directly include banks in processes—provide the institutions with easily-to-integrate solutions (by joining a project rather than carrying out several months' worth projects ourselves). Apart from this, we try to channel traffic in portals in order to provide banks with access to B2C clients.

services provision flexibly, rather than its size, that defines its position in the market. FinTechs already now have advantage arising from their implementation possibilities and the ability to add high-quality value, yet this is not reflected in their market position. Opening the e-payments market to new methods may prove to be a change similar to that of to contacless payments, which have taken the market by storm. Another 19% of FinTechs point out that banks are neither their competitors nor clients. The last group of FinTechs (13%) declare that banks are their direct competitors, yet 2/3 stress that they cooperate with banks on other products and services.

WHAT WILL COOPERATION BETWEEN YOUR BANK AND FINTECH START-UPS LOOK LIKE IN THE NEXT 12 MONTHS?



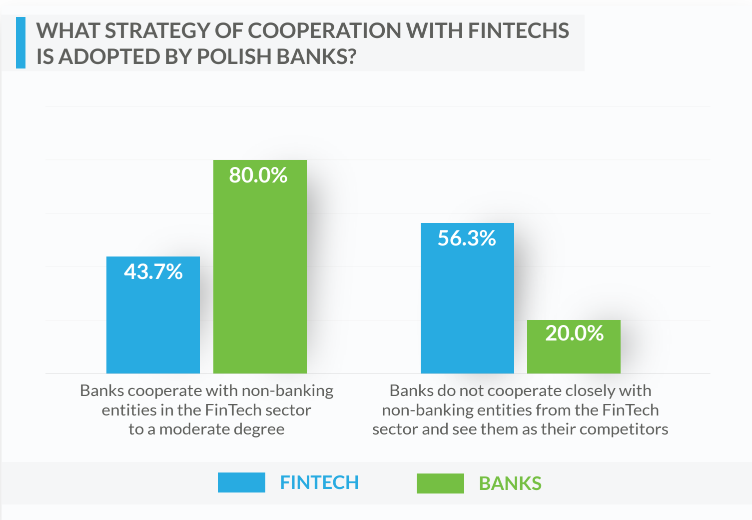
80% of banks declare that within the next 12 months they are planning to start or to continue commercial cooperation with start-ups. This result should be interpreted combined with answers to the question about the main barriers that stop the FinTech market from developing. Other market players' unwillingness to cooperate with FinTechs is cited the most often. This suggests that the banking market sees itself as conservative and unprepared to extend its cooperation with FinTechs, yet individual institutions are increasingly creating plans and even initiatives to deepen cooperation and take advantage of currently available FinTech solutions. It can be concluded based on the answers that banks are still at a stage of identifying development opportunities arising from cooperation with FinTech ventures, especially smaller ones. The fact that banks approach the problem with caution may be confirmed by their attitude to FinTech cooperation model. Banks express willingness to establish collaboration with start-ups, yet in the nearest future only a small group of banks is planning major investments in the FinTech market.



More than 51% of those surveyed point out that supporting private initiative to develop Poland's financial innovation sector is the most important way in which a state may stimulate creating and disseminating innovative products and services. This support should not only mean direct or indirect financing, but also lower requirements and thresholds for new market entrants. 27.5% of the surveyed institutions point out that the state should be neutral in its support, and 21.3% of them stress the need for the government to develop Poland's financial innovation sector development programme.

IDI RESPONSE - FINTECH

The biggest challenge stems from companies being unprepared to use innovation since they claim that small FinTechs have low credibility.

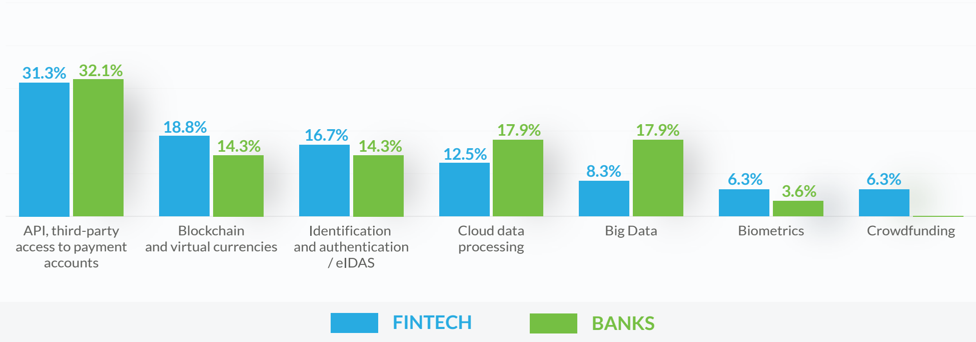


IDI RESPONSE - BANK

Banks are beginning to ask more and more questions about what strategy to adopt towards start-ups and how they can benefit from such cooperation. The regulator does not welcome any more new additional alternative channels and methods of on-line sales such as video onboarding or transfer accounts. The practice is that banks see the value of cooperating with start-ups, but they run out of ideas at the stage of committees and final decisions when large companies are selected.

Almost 62% of the respondents say that banks cooperate with the market to a moderate degree, and the remaining 38% admit that banks do not cooperate closely with non-banking players in the market and see them as competitors. The results show a considerable disparity between banks' and FinTechs' opinions. The former perceive their cooperation with FinTechs much more favourably, whereas companies other than banks are more equally divided in their opinions. None of the respondent indicate close cooperation between banks and FinTechs.

THE MOST IMPORTANT TECHNOLOGIES WHICH WILL CONTRIBUTE TO THE STRATEGIC DEVELOPMENT OF POLAND'S FINTECH MARKET



Banks' and FinTechs' opinions on the most significant technologies are more similar. API banking, or enabling third parties to gain access to bank customers' payment accounts under strictly specified conditions, is stressed the most often. The technology is pointed out by 32% respondents (31.3% of FinTechs and 32.1% of banks). As for other items, banks and FinTechs slightly differ in their opinions:

- blockchain and virtual currencies – (18.8% of FinTechs and 14.3% of banks),
- identification and authentication/eIDAS – (16.7% of FinTechs and 14.3% of banks),
- data cloud computing – (12.5% of FinTechs and 17.9% of banks),
- Big Data – (8.3% of FinTechs and 17.9% of banks).

The FinTech sector has a major advantage over traditional institutions that arises from a various level of regulations created by national and international decision makers. As public trust institutions and with their activity being regulated by separate laws, banks do not have the same competencies as FinTechs do, which are able to provide modern customers with innovative solutions much faster through having the ability to respond to their expectations.

The fact that the European Commission is introducing the new PSD2 Directive is not without significance, either. The Directive will enable companies outside the banking sector to offer financial services on entirely new terms. Under the Directive, banks will be obliged to give access to customer's data to the external financial services providers. Poland must implement these regulations till the end of 2017.

Development of FinTech in the world shows that relationships will move towards closer and closer cooperation between FinTechs and traditional financial institutions and greater engagement on the part of traditional financial institutions in FinTech sector investments.

3. Role of the state in financial innovation ecosystems

20 years ago, we were witness to major technological breakthrough. The Internet democratised publishing markets, trade, and access to technology. The radical nature of the revolution was linked with information transfer. The Internet (or an information transport layer) enabled a flow of information on a global scale. It thus revived the world's economy, increased the availability of goods and technologies, and improved the averaged life quality. Information is now a valuable resource. Information technology is a relatively new sector that plays a key role in the global economy. It is the engine of the Internet Revolution as well as a sector that has transformed the global economy to the biggest extent. It has changed the face of markets related with information distribution (publishing, media), value information exchange (e-commerce, transactional markets), and put a dent in those sectors that depend on information exchange, storage, and gathering through an information stream that penetrates the economy.

Information has become widely available and visible in various consumer technologies. We have mastered an efficient method of information transfer—we now transmit it ever faster and more effectively. Information technologies that are based on information theory are now mature. Yet an efficient, or safe, transfer of values has not yet been mastered.

Now it is time to develop Version 2.0 of the Internet, an enhanced one. We are entering the Internet of values—a revolution of on-line value transfer, another stage of the evolution of technology serving people. It is the third intellectual revolution (following the Agricultural and Industrial Revolutions), this time based on electronic machines. a computer revolution requires advanced mathematical and engineering knowledge, as well as technological imagination from people. These challenging branches of science create the basis for understanding ongoing transformation. Efforts to build intellectual capital in the area of digital value management

We are entering
THE INTERNET OF VALUE.

A draft Strategy for Responsible Development mentions FinTechs as one of the strategic sectors with the potential to become engines of the Polish economy in the future.

technologies (FinTech) lowers risks arising from the trap of an average economic growth which may be further exacerbated and make it harder to depart from the current model of economic innovation development. Investment in innovative information technologies is one of the pillars of Poland's economic competitiveness abroad. a draft Strategy for Responsible Development mentions FinTechs as one of the strategic sectors with the potential to become engines of the Polish economy in the future.

In digital economies, building intellectual capital is fundamental to a vibrant innovation ecosystem. The role of the state is key in creating conditions in which emerging financial technologies may develop freely and securely. Traditional transactional markets are based on trust that stems from regulatory protection, many years of services provision, and often the "too big to fail" theory. New financial and related technologies are a new paradigm of trust that migrates towards technologies, algorithms, and protocols. The millennial generation (people born after 2000) trust machines more than they do people. According to the 2015 Accenture Judgement Calls study, 83% of millennials trust recommendations from intelligent machines. To compare, among baby boomers the figure stands at 66%. a 2015 Spectrum Group study carried out among millennials show that 40% of those surveyed are going to use investment robo-advisors. Young people tend to distrust traditional financial institutions. This is due to the 2008 financial crisis. Coming of age in a recession, the young people bore the brunt of it (students' loans may dog them for the rest of their lives; unemployment; low wages leading to social exclusion, making it impossible to take out a mortgage). In addition, universal access to information in the Internet means that those born after 2000 verify the offers they receive on their own. During the process the offers turn out to be unattractive.

The young generation has entirely different expectations of financial services than the older one. They want simple and fully digitised processes. They place more trust in machines than they do in people.

For them, trusting in technology is natural. Traditional financial institutions should concentrate on building an atmosphere of trust with clients that usually stems from good experiences. Cap Gemini has conducted a study showing that young customers are ready to give up raised security and corporate standard of service for positive customer experience. This is understandable since, as they see it, security is ensured by technology itself.

Building trust on positive experiences is key to the growth of the ecosystem of innovation, not only financial. This is down to a number of factors—good regulations, building intellectual capital through research and support for education, an innovative integrated community and efficient cooperation as part of an ecosystem, sharing of knowledge and experiences.

Good practices of building good innovation ecosystems with particular attention being paid to financial technologies show that the stage has a significant leadership role to play. It is the state's responsibility to provide regulation and supervision, which, when clarified and sorted out, will provide the first step towards creating conditions conducive for its economy to gain competitive advantage. Wisely designed action frameworks created by innovators and intellectual capital as talents are the springboard for further activities that consist in kick-starting tools to excite and support budding and existing innovation.

An ecosystem starts with creating a long-term and sustainable development strategy for the financial innovation market. In order to take the best decision, it is important to analyse the current situation, identify key barriers, and plan relevant strategic activities to build economic advantage based on the world's best models.

Poland's conveniently located and technologically advanced financial services market is entirely capable of becoming the region's financial innovation centre.

Poland's conveniently located and technologically advanced financial services market is entirely capable of becoming the region's financial innovation centre. In order to have this achieved, it is necessary to draw on the best possible models and experiences.

Role of the state in building the FinTech hub

Poland is facing a chance to create a new generation financial centre focused around financial innovation. The strong FinTech Hub is founded on well-designed institutional, legal, technological, and social infrastructure that may lead to the creation of Europe - and world-wide solutions in Poland. a strong and state-of-the-art banking sector is a contributing, yet insufficient factor.

Success of building a financial innovation centre depends on a number of factors:

- quality of education and access to qualified staff,
- market size,
- economic and political stability,
- costs of running a business,
- costs of living,
- access to financing,
- openness of society to innovation,
- existence of institutions that promote and coordinate activities to support the development of financial innovation,
- vibrant ecosystem of technological entrepreneurship,

- support and acceleration infrastructure, attractiveness of a given centre for foreigners or even access to suitable office space,
- and finally, or even more importantly, the state's active role in the process.

The state's role is particularly significant in early stages of the FinTech ecosystem, something that can be confirmed by the results of the study presented in the report "Connecting Global FinTech: Hub Review 2016" commissioned by the Global FinTech Hubs Federation, an organization that associates leading global FinTech hubs. The report expressly indicates that the active role of the state, progressive regulations, innovation and cooperation culture, strong financial sector, and private investors are all conducive to the development of FinTech hubs.

Evidence from the United Kingdom proves that the desired results can only be produced by systemic and coordinated action on the part of the state in the form of a cohesive policy formally materialized in a government programme. Such a programme should be targeted at specific areas which, combined together, raise the chances of success for an undertaking:

> The active role of the state, progressive regulations, innovation and cooperation culture, strong financial sector, and private investors are all conducive to the development of FinTech hubs.

- vision,
- regulatory policy and its coordination,
- supporting private initiative,
- fiscal policy,
- cyber security,
- promoting solutions that stimulate markets (e.g. regulatory sandbox, regtech).

VISION

The British government has set clear objectives for the financial technology market that go far beyond regulations themselves. By 2020, London is to become the world's key new-generation financial innovation centre. Creating the right and realistic goal on a domestic level and building Poland's ambition to realize it is a prerequisite for the country being positioned as a regional financial innovation centre.

REGULATORY POLICY AND ITS COORDINATION

These activities aim at building a modern legal framework, including government programmes, to support the financial innovation sector and ensuring stable and secure conditions in which this market can operate.

Government programmes are an important contributor to supporting financial innovation and should realise various goals: from optimising how supervisory agencies function, through promoting domestic companies abroad, and attracting foreign ones to the domestic market, all the way to ensuring the entire financial sector a high level of security (cyber security).

UK

The United Kingdom is a global FinTech and example for those interested in building financial innovation centre as part of a set of government programmes and modern financial supervision.

An example of how pro-actively the British Financial Conduct Authority approaches the problem includes the Project Innovate Programme launched in 2014. Innovative companies interested in marketing new solutions can rely on wide support e.g. in obtaining necessary permits.

The British government is conducting an interesting initiative called the Global Entrepreneur Programme, which aims at encouraging foreign technological entrepreneurs to move their headquarters to the UK with a system of legal and logistic support.

Switzerland

The country is an example with a dispersed FinTech hub with several major centres. Geneva and Zurich are taking the lead (both cities are global leaders). The third centre is located in the canton of Zug, whose appealing tax environment has so far attracted hedging funds and international corporations and which is now concentrating on financial cryptography, or financial technologies based on virtual currencies and dispersed register technologies (DLT/Blockchain). Regulatory openness, attractive employment conditions coupled with low taxes for financial technology and cryptography companies (e.g. operating in bitcoin exempt from VAT) make the canton even more suited to become the regional hub for cryptography businesses. Decentralised administration, presence of renowned cryptography organizations such as Ethereum Foundation, and Swiss-specific lassez-fair policy coupled with business facilities create a safe haven amid legal and regulation uncertainty that the new digital value management market is accompanied by.

Historically, Switzerland has always been the centre of global finances, including banking. Many years' of experience and accumulated sector knowledge means that the country is well positioned to embrace the world of new finances. The way in which Switzerland manages innovation is an invaluable source of inspiration for Poland.

Australia

Australia is taking a similarly progressive approach. The financial sector is Australia's biggest part of its economy and generates more value than the mining and agricultural sectors combined. The banking sector is particularly strong, with its value being raised by an average 4% a year in the last decade. Deregulation of the sector that took place in the 1980s attracted international players and led to a growth of the entire sector and, indirectly, the economy. The highly developed ICT sector is conducive to innovation. With its own experiences, Australia is strongly focused on financial technology. Complete structured information on the FinTech strategy pursued by the government can be found on the Treasury's website. The strategy sets clear priorities and is part of the country's digital transformation agenda. In addition, it is enhanced with specific guidelines on tools to incite innovation: from regulatory sandboxes, technological priorities, tax reliefs for high-risk funds, visas for entrepreneurs to encourage them to settle in Australia, through government STEM investment programme, all the way to decriminalization of bankruptcy as part of acceptance of failure, key in the innovative process.

In 2015, Australia's Securities and Investment Commission (ASIC), one of the country's leading financial services regulators, launched the Innovation Hub, a project that consists of several key elements. The first is about active engagement of the regulator in market initiatives such as physical FinTech hubs, co-working spaces, and the willingness on the part of the institutions' representatives to meet with entrepreneurs. The second concerns providing market players with informal opinions relating to complex business regulations. The process is implemented by using an appropriate form on a web page in a dedicated web service where a lot of useful information can be found. As part of the third element, an ASIC internal task group coordinates efforts to support the sector and analyses new phenomena and business models. The last element is about appointing a dedicated consultancy body for the ASIC, namely the Digital Finance Advisory Committee (DFAC), which – like the Committee for Payment System at Poland's National Bank – comprises public and private sector representatives and discusses important problems of the Australian FinTech sector on a quarterly basis. The Australian advanced ICT sector provides the financial sector with additional support and facilitates the development of financial and related technologies. a similar situation exists in Poland — advanced technologies in the vibrant financial sector should drive financial innovation. Due to this analogy, the Australian model is a valuable source of inspiration for Poland.

Singapore

Also worthy of note is Singapore, where the FinTech and Innovation Group (FIG) has been created. It is tasked with ensuring that the public and private sectors cooperate on a regulatory policy and a financial innovation support strategy. In 2015, the Financial Sector Technology and Innovation Scheme (FSTI) was launched with an aim to financing public and private initiatives to support the sector such as innovation laboratories in the next 5 years.

Hong Kong

In Hong Kong, the FinTech Strategy Group has been set up, which is a steering committee with representatives of the government, private sector, and the world of academia, to build a strategy of transforming the territory into a global FinTech hub. The government has also established two funds to support financial innovation – the Injection into Innovation and Technology Fund and the Innovation and Technology Venture Fund.

Germany

In Germany, efforts are under way to create a special advisory committee to resolve regulatory problems in the financial innovation market. Within the Federal Financial Supervisory Authority (BaFin), a special department is being set up to deal with financial technology regulations. Its role is to improve the market's security and stability, deal with a range of issues related to the efficient implementation of EU regulation, and adjust other branches of law to the new situation associated with developing state-of-the art financial services.

FISCAL POLICY

Access to capital is one of the key barriers for early-stage enterprises. For this reason building mechanisms that encourage investors to make investments in start-up is of the utmost importance. Well-designed schemes such as the British Seed Enterprise Investment Scheme (SEIS), the Enterprise Investment Scheme (EIS), and Venture Capital Trusts (VCTs) should promote investment in start-ups by offering significant tax benefits and reducing investor risks. It is worth pointing out that European fiscal support programmes are not limited to only financial innovation projects, but are also targeted at various innovative projects.

#StartInPoland

In June 2016, the #StartInPoland programme was announced, a suite of instruments for innovative companies. It is an umbrella brand that encompasses the most important tools for supporting start-ups in Poland. Activities related to capital instruments have been consolidated and will be conducted by the Polish Development Fund. As for accelerator programmes, the Polish Agency for Developing Entrepreneurship will play a major role. In the next 7 years, Poland has the potential to become a place in which 1,500 companies will emerge and thrive, creating high-quality innovative technologies capable of competing in foreign markets. The goal behind this is to open large companies, including State Treasury ones, to innovation by for example creating a portfolio of investment needs and, more importantly, to make well-informed investments in innovative projects run by start-ups. Thanks to this instrument, Polish enterprises will increase resources on innovative activity, ensuring rapid economic growth by supporting projects with chances of success both in Poland and in the world. The programme also aims at improving the competences of staff responsible for innovation in large companies and taking investment decisions regarding innovative projects carried out by start-ups.

CYBER SECURITY

Cyber security is becoming critical to developing financial innovation. This is noticed by regulators in key financial centres. As early as in 2011, the UK prepared its own Cyber Security Strategy, and in 2015, the National Cyber Security Programme and Centre was established with a budget of almost £2bn until 2020. Also the Polish Ministry of Digitisation has recently treated the area as a priority by developing the Polish Republic's Strategy for Cyber Security for 2016-2020 and created the National Centre for Cyber Security.

SIGNIFICANCE OF PRIVATE INITIATIVE

Private initiative supported by the state is the second key contributor to the proper functioning of the FinTech ecosystem. Private initiative has various goals such as integrating the financial innovation environment, representing the interests of the market's players, as well as standardising activity on a sector level and R&D.

Examples of the most resilient private initiatives that create local financial innovation ecosystems include FinTech Forum Frankfurt, Holland Fintech, and the UK's Innovate Finance. They are dedicated to integrating the financial innovation environment, particularly establishing efficient cooperation between recognised financial institutions (banks) and start-ups, education, promotion of local solutions abroad and representing the interests of the entire environment and dialogue with regulators and supervisors.

Commercial initiatives are also worthy of mention, which, in principle, do not require support from the state, yet their role in building the ecosystem is fundamental. These are sector-related meetings e.g. the New Finance or the Financial Services Club, which are also held in Warsaw on a regular basis. Physical FinTech hubs with London's Level 39 or Tel Aviv's the Floor being model examples play a significant role in building the ecosystem. In Warsaw, the same initiative is emerging, called the Heart of Warsaw.

SOLUTIONS FOR STIMULATING FINANCIAL INNOVATION

The state should also work actively on ideas to stimulate new financial innovation solutions. Their examples include regulatory sandboxes and the so called RegTechs.

REGULATORY SANDBOX

Regulatory sandbox solutions have been successfully implemented in several countries that are leaders of financial innovation, particularly in the United Kingdom, Australia, Singapore, the USA, Malaysia, and Hong Kong.

Regulatory sandboxes are safe spaces in which entrepreneurs can test innovative products, services, business models and mechanisms without having to comply with all legal requirements for this type of products and services, as well as institutions that offer them. According to general assumptions, regulatory sandboxes are designed to enable producers to offer products or services to a limited group of consumers. Such a solution makes it possible for entrepreneurs, especially start-ups, to learn in a secure environment how consumers respond to new solutions.

As shown by countries that are pioneers in the field, regulatory sandboxes are capable of providing more efficient competition in the financial services innovations by reducing time-to-market and costs of new products, wider access to financing, raising the number of products which can be tested before their business implementation, and, ultimately, ensuring consumers wider protection since the regulator participates directly in the process.

The necessity to create regulatory sandboxes was recognized by the UK's financial supervision authority already some time ago. It pointed out in its 2015 statement that if the administration was to maintain its leading position in Europe's financial innovation market—and the country's financial innovation market is estimated to generate about 20bn GBP in yearly revenue and it keeps on growing—it is critical to implement such solutions as regulatory sandboxes to support the development and competitiveness of financial innovation, an outcome which will maintain the attractiveness of the British market.

Potential advantages for the financial services market to be gained on implementation of the regulatory sandbox include particularly:

- Shortened product time-to-market combined with potentially lower costs. An uncertain regulatory environment often discourages entrepreneurs from investment in innovative solutions in the area of financial services. As examples from other sectors show, product time-to-market combined with use of the regulatory sandbox may be reduced by one third with an increase in product profitability by 8% during its entire lifetime.

- Better access to financing – financial innovation is mainly based on investments largely made by capital funds. Regulatory uncertainty means that financial innovation market entrepreneurs find it harder to seek funding. This also results in decreasing enterprise valuation, since a risk factor has an adverse impact on investor assessment. As estimated by the UK's Financial Conduct Authority, differences in this respect may reach even 15%, yet it is hard to assess how many entrepreneurs do not receive any funding for this reason.

- More innovative products are offered a chance to enter the market. Very often innovative products are not marketed because of the existing regulatory barriers relating to their proper classification. Regulatory sandboxes make it possible to determine regulatory risks during the testing phase before final decision on product implementation, which means a considerably lower risk. Introducing a regulatory sandbox will also mean being able to offer consumers more innovative and competitive products, at the same time bringing down costs and raising availability. This solution also allows beginning direct cooperation between supervisors and entrepreneurs already at the stage of product design, thus ensuring a greater impact on consumer protection solutions.

Such a regulatory sandbox must be implemented after consultation with all entities responsible for the way in which the financial services market functions so that the solution ultimately meets their expectations.

PROMOTING REGTECH SOLUTIONS

In a dynamically developing technological reality, compliance with continually changing regulations is of key importance to companies in the financial sector. This is why RegTech is gaining more and more popularity around the world and is being implemented by relevant supervisory authorities. Laws that are currently in force do pose a significant challenge to financial sector companies, especially small innovative start-ups.

RegTechs help entrepreneurs manage regulatory risks and requirements better. They are also found useful by supervisors and regulators in that the authorities are able to fulfil their basic consumer protection goals, ensure market security, stability and competition.

RegTechs are about using new technologies to ensure more efficient and effective compliance with laws and regulations. RegTech brings a lot of advantages:

- decreases ever rising costs in compliance assurance,
- eliminates the risk of regulatory overlap,
- performs supervisory and regulatory functions in real time,
- helps manage bigger and bigger data sets,
- helps analyse the market on a current basis,
- helps identify risks of individual entities more efficiently , and also on the level of system risks.

According to the report "Innovating with RegTech" by EY, employing RegTech produces relatively fast results when it comes to ensuring operational efficiency and financial advantages with reference to compliance and risk management requirements. Modern real-time data analytics makes it possible to analyse large amounts of data in a brand new way, which leads to improved information management solutions. In the long perspective, the fundamental benefit of RegTechs will be its ability to facilitate development of innovative solutions by enhancing consumer confidence. RegTechs are also expected to facilitate seamless reporting. Developing sustainable technologies in a safe regulatory environment will cause innovation to flourish, ensure positive competition in the FinTech sector, improve identification of risks, and ensure the appropriate level of consumer protection.

SUMMARY

Examples from foreign countries show that the key component of the state policy on the FinTech sector is to formulate clear goals, and attain them through an efficient programme. Institutions have their own part to play in that they need to appoint a consultancy and coordination body with representatives of the public sector (the government, supervisory agencies, the Central Bank), and the private sector (organizations from the financial innovation sector) with an aim to preparing a comprehensive programme to support the financial innovation sector, and then coordinate the process of its implementation by all the entities concerned, both public and private. The key element of a government strategy should aim at optimizing a legal framework and the functioning of supervisory agencies for them to be more transparent and open to the market. Private initiative is also of great importance and should be supported by the government.

SUMMARY

Our research shows that Poland has at least several dozen FinTech companies which comprise this market's all main and globally known segments. Entrepreneurs specialized in e-payments and financial platforms are the most numerous and mature group. Other strengths include data analysis, cognitive algorithms (machine learning), and sales channels development. Several distinct companies operate in social financing.

Polish FinTechs are largely prepared to cooperate with banks because even though the former target directly the consumer market, they do recognize the need for cooperation and resulting mutual benefits. Polish banks, too, declare that they have a favourable approach to non-banking companies. Depending on how mature they are, they either observe the market or are its active participants, mainly through direct cooperation that may take on various forms.

According to a traditional approach to the financial technology market, it can be divided into start-ups and banks. Being technologically-advanced the Polish market shows a relative homogeneity—there is quite a number of similarities between start-ups and banks. Innovations are created by development, IT, and remote channel management departments in major Polish banks and well-established payment sector companies such as Blue Media or PayU. It is hard not to notice a number of similarities not only in the dynamics of functional changes, marketing aggressiveness, and employee selection according to specific criteria. For this reason, there is more and more talk about "Fin-Tech banks" or "FinTech in banks", and the most innovative banks see themselves as part of the FinTech sector.

Implementations such as contactless payments (both by means of cards and HCEs based on mobile payments), bank branded pay-by-link payments and sector solutions such as BLIK have made us a European benchmark for this type of technology.

High popularity of mobile and e-banking stems from both technological diffusion and the Polish society's openness to innovation and high dynamics of development of Polish transactional banking systems. Quite a lot of innovative solutions have been implemented by banks in close cooperation with FinTech enterprises which were still start-ups during their first banking implementations. For banks, the FinTech revolution means that they must and want to re-define their approach to start-ups so that it becomes even more efficient, open, and inclusive.

Regulatory changes to follow from the PSD2 Directive make most institutions think that the direction is a foregone conclusion. FinTechs very often have ready, innovative solutions that go beyond traditional banking. Yet, in order to realise the potential behind them, they need the right business scale and consumer trust. And this is exactly what start-ups can be offered by banks.

For this reason, Poland is properly positioned to join the competition to become one of Europe's key FinTech hubs and the leader in our region.

This is going to take place, though, only when we have created a unique economic microclimate conducive to financial innovation with a balance between value and security. In an era of great capital and talent mobility, and lower and lower market entry barriers, Poland's national goal should be to create conditions to attract the world's greatest talents who will be able to develop their ideas, move their headquarters to the country, and create their global solutions here.

To succeed, it is necessary to conduct correct diagnosis of the current situation, first. Then it is significant that we recognize our strengths and weaknesses, specify the right goal, and then select proper tools and build a strategic plan for the government, culminating in its implementation by both private and public sectors.

Coordination of these activities and close cooperation between FinTech start-ups and mature companies, recognized financial institutions, technology providers, regulators, and supervisors are a prerequisite for the financial innovation sector to become one of the engines of Poland's economic growth.

STRENGTHS AND WEAKNESSES OF POLAND AS A REGIONAL FINANCIAL INNOVATION CENTRE

STRENGTHS

- Competitive and innovative financial sector
- Developed cooperation between banks and other financial institutions (e.g. payment services)
- Size of the market and access to other markets (European passport)
- High-class human resources
- Low cost

WEAKNESSES

- Regulations not supportive for financial innovation
- FSA does not have a goal to support financial innovation
- Lack of support on the part of the government when it comes to a financial innovation sector development programme
- Limited access to private equity capital
- Poorly developed ecosystem of cooperation with start-ups
- Low innovation culture

SIGNIFICANCE OF THE FINANCIAL INNOVATION SECTOR FOR ECONOMIES

Development of the financial innovation sector is critical to Poland's financial market and economy as a whole. With a proper balance between security, openness and dynamics, it may perform the following social and economic functions:

- Development of an innovative sector with a global high development dynamics—the potential to expand internationally easier and attract such investments to the country,
- Promoting a cashless and paperless economy, which means lower transactional costs and greater transparency of economic turnover.
- Creating high-quality jobs based on the competences and high qualifications of the country's staff,
- Help with financial and technological inclusion of wider segments of society,
- Advancing financial education both among individual and corporate clients.

TWO SCENARIOS FOR DEVELOPMENT OF POLAND'S FINANCIAL INNOVATION MARKET

Poland's financial innovation sector may develop based on two alternative scenarios. These are of course two extreme, yet distinct scenarios to mobilise joint action.

PASSIVE SCENARIO

According to this scenario the financial innovation sector will maintain the current sustainable development determined by the market only. The government will not take any action to optimise financial supervision nor will it implement a programme to support the sector. The quality of financial regulations will remain on the current level. No institutions will be created to build Poland's financial innovation centre. For competitiveness, the sector will rely on local products and low employment costs. No pan-European and global FinTech start-ups will be created nor will they base their operations in Poland. Berlin will remain the most powerful financial innovation centre only to keep on strengthening its position. Polish FinTech start-ups will find London and Dublin to be the best places for operation and seeking development capital.

Banks will stay innovative, yet they will not engage pro-actively in Fin-Tech cooperation. There will be no efficient ecosystem for cooperation with start-ups, a fact which will make it impossible to create innovation that will help Polish banks expand into other markets.

As a result, Poland will exert limited influence on the direction of the development of both domestic and European financial sectors.

PROACTIVE SCENARIO

This scenario provides for a conscious and active role of the state in building a significant financial innovation centre (FinTech Hub) in Poland that could become a phenomenon in the European Union with the country being the leader in the region. As a result, the government will prepare and implement an appropriate programme together with the public sector.

The government will conduct an extensive review of financial market regulations, looking to raise its competitiveness and attractiveness for market players and make the regulatory environment one of the most efficient one in the EU.

Poland's financial market supervisory authority will be optimised to support the financial innovation sector. In effect, Polish supervision will be perceived as one of the most progressive and open FinTech sectors. The supervisory authority will launch dedicated programmes and solutions such as regulatory sandbox.

The government will introduce a range of incentives, also tax benefits, for new undertakings, including those moving their operations from other Member States and investors engaging their capital in financial innovation.

The market will enjoy intensive cooperation between mature financial institutions (banks, payment institutions, insurance companies), FinTech start-ups, technology providers, and universities, regulators, and supervisors.

Universities will initiate educational curricula dedicated to financial technology to enhance the country's intellectual potential, also with regard to human resources.

Consequently, Poland will have at least one pan-European financial services provider. Number of FinTech start-ups will move their headquarters and operations to Poland. Part of solutions created in this way will be used or purchased by banks. The Polish financial sector will be strengthened.

Analysis and implementation of the following recommendations may be the first step to make the scenario come true.

FINAL RECOMMENDATIONS

RECOMMENDATIONS FOR THE STATE

1. Vision

In order to take specific action, it is necessary to set a clear vision to determine both the goal and broadly defined tasks. The vision will enable public and private stakeholders to identify themselves with it and take joint action.

Vision ideas:

Poland will become Central and Eastern Europe's most appealing location for conducting financial innovation operations thanks to:

- friendly regulatory framework,
- progressive, open, and effective financial supervision,
- system of support for entrepreneurs and investors,
- efficient cooperative ecosystem,
- high-class education and talents.

2. Coordination

Then consideration must be given to establishing a coordinating and advisory unit comprising both the public sector's (government, supervisory authority, and Central Bank), and the private sector's representatives (those representing the financial innovation sector). The unit should be tasked with identifying barriers and concerns, and helping the government prepare a comprehensive programme to support the financial innovation sector and build a regional financial innovation centre in Poland.

Such a unit should be a platform for dialogue between stakeholders from the private and public sectors on important issues, concerns, and challenges posed to Poland's financial innovation sector.

One important thing is to coordinate implementation of a programme prepared and adopted by all entities concerned, both public and private.

3. Financial innovation development programme in Poland

As a minimum, the programme should address the following issues:

I. Optimising the way in which financial supervision functions to support financial innovation

This should be multi-dimensional and refer to such areas as:

- extending legal objectives to include activities to support financial innovation,
- specifying or designating a dedicated entity as part of Polish FSA,
- establishing a programme to promote innovative entrepreneurs that want to conduct business in Poland,
- establishing an efficient framework of dialogue with the market,
- establishing a legal and organizational framework to foster solutions to market innovative solutions (e.g. regulatory sandboxes),
- establishing an effective mechanism for pro-innovative interpretations of law and regulations,
- speeding up and cutting down formalities related to licence procedure,
- friendly information policy,
- pushing down the costs of financial supervision,
- making greater use of the proportionality principle,
- optimising reporting requirements, together with using RegTech solutions.

II. Review and modification of law regulations in force

Eliminating the so called gold plating, or adopting solutions that interfere with the expected policy goals to be achieved by EU regulation, It is necessary to start reviewing the current laws and regulations, particularly those that implement EU laws in order to eliminate imprecise and too restrictive implementation of EU regulation, leading to too much stress for entrepreneurs. At the same time, use of national options should be analysed that may strengthen Poland's position as the FinTech Hub.

The Payment Services Act, the Banking Act, the Competition and Consumer Protection, personal data processing laws, and electronic services provision regulations should deserve special consideration.

III. Monitoring laws, regulations, and institutional solutions to support financial innovation used in other EU Member States and global leading FinTech hubs

Identifying and eliminating barriers is a pre-condition, yet this will not be sufficient, if Poland does want to bring the vision of a regional financial innovation hub to life. In order to have this achieved, system regulations and solutions in Poland should be proactive and serve as models. It is necessary to monitor regulations and institutional solutions not only in EU Member States, but also in global FinTech hubs located outside Europe (Singapore, Hong Kong, Australia).

IV. Inclusion of selected phenomena in the regulatory arrangements in order to increase legal certainty or ensure clear exemption from regulation

The so called crowd funding platforms is an example of activity that requires dedicated regulation. In the long perspective, also block chain technologies and virtual currencies will require special regulation, yet currently the market segment needs uniform interpretation on the part of regulators and supervisors for stimulation.

V. System of incentives for start-ups and corporations

It is necessary to come up with mechanisms to encourage FinTech solution providers (both start-ups and corporations) to locate their operations in or move them to Poland.

VI. System of incentives for private capital

Access to capital is one of the key barriers for early-stage enterprises. For this reason building mechanisms that encourage investors to make investments in start-up is of the utmost importance. Well-designed programmes should encourage investment in start-ups by offering considerable tax benefits and lowering regulatory risks.

VII. Continued state digitalization

Digitalization of the administration that will improve the efficiency of the relationships between citizens and entrepreneurs with the state is of considerable importance to the development of financial innovation. State digitalization should also be accomplished by building intellectual capital through extensive research into emerging computing technologies in the context of value transfer.

VIII. Open data & open bank

It should be recommended that as for cooperation between the private market and the administration, changes should be introduced with regard to access to data in public registers so that the data are easily available and used as part of innovative services provision by entities in the financial innovation sector, including banks. Openness and digitalization of access to public data not only speeds up turnover, but also drives down costs both for citizens and the state. As shown by other European countries, access to knowledge, including open access to public data has a major impact on economic growth and building new branches of the innovative financial market (e.g. Denmark, Estonia, Sweden).

Creating a national standard with regard to third-party access to payment accounts under the PSD2 Directive should also be supported. Such an initiative is pursued by the Association of Polish banks. Its success may strengthen considerably the Polish financial innovation sector, ensuring, among other things, a high security level for transactions, access to data, and initiating payments.

IX. RegTech

The regulator should support and use new technology solutions in order to ensure more efficient and effective regulatory compliance and streamline supervision, particularly in the area of reporting and compliance.

X. Talent education and management

It is of vital importance to develop a talent development strategy, in particular research on a talent pool and map future demand.

In this regard, it is appropriate to recommend creating competence resources by developing and upgrading current educational digital and STEM curricula at universities in cooperation with banks and financial institutions, and improving engineering and IT development resources by easily accessible, targeted educational curricula related to developreneurship.

In the medium to long term, attracting foreign talent will be of the utmost importance, which will be facilitated by granting global entrepreneurs and innovators special visas.

FINAL RECOMMENDATIONS

RECOMMENDATIONS AS TO THE IMPLEMENTATION OF REGULATORY SANDBOXES BASED ON EXPERIENCES FROM OTHER MARKETS

- Setting up a unit responsible for financial innovation, particularly regulatory sandboxes, including processing participation applications and monitoring tests, as part of the Financial Services Authority;

- Specifying criteria for entrepreneurs participating in tests in a sandbox landscape;

- Providing entrepreneurs extensive support by relevant administrative bodies (Financial Services Authority [Polish FSA], Inspector General for Personal Data Protection [GIODO], Office of Competition and Consumer Protection [UOKiK], Financial Ombuds, General Inspector for Financial Information [GIIF]) depending on the product to be tested;

- Developing mechanisms to make sure that consumer security is protected during tests in a sandbox environment, especially providing them with legal and financial protection;

- Creating a regulatory sandbox which will allow entrepreneurs to test their products and services in a virtual testing environment built by the providers cooperating with the regulator (e.g. as part of tests carried out on publicly available data sets or using data moved to the testing environment by other entrepreneurs);

- Setting up a unit to perform the role of the so called umbrella for innovative entrepreneurs offering products after it has obtained permission from and consulted with the Financial Services Authority. The Financial Services Authority would be responsible particularly for setting up such an entity, provide consultation on a current basis, and monitor its performance.

FINAL RECOMMENDATIONS

RECOMMENDATIONS CONCERNING IMPLEMENTATIONS OF REGTECH SOLUTIONS

- Introducing regulatory solutions to automatise corporate risk management and compliance processes;

- Building a regulatory platform with an overview of requirements used with reference to particular kinds of regulated activity;

- Appointing a team to prepare uniform reporting compliance solutions to automate the process considering use of dispersed technology registers;

- Support from relevant administrative bodies (Financial Services Authority [Polish FSA], Inspector General for Personal Data Protection [GIODO], Office of Competition and Consumer Protection [UOKiK], Financial Ombuds, General Inspector for Financial Information [GIIF], Main Statistical Office [GUS], Ministry of Finance) for providing integrity of regulatory technology solutions.

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METHODOLOGY OF THE REPORT

In the study initiated and carried out by the Fintech Polska Foundation and Obserwatorium.biz sp. z o.o., a consultancy company, supported by the Centre for New Technology Regulations at the Faculty of Law and Administration, the University of Warsaw, the following 21 FinTechs and 13 banks took part:

Alior Bank S.A., Azimo, Bank Gospodarstwa Krajowego, Bank Polskiej Spółdzielczości S.A., Bank Zachodni WBK S.A., BGŻ BNP Paribas, Blue Media S.A., Cenatorium, Citi Handlowy, CONSDATA, Credit Agricole Bank Polska S.A., Currency One S.A., Efigence SA, Finanteq S.A., Getin Bank, GetLine.in, ING Bank Śląski, InPay, Kontomierz.pl sp. z o.o., Kundi, MoneyFriend, Paymento S.A., PayU, Pekao S.A., PKO BP S.A., Plus Bank S.A., Raiffeisen Polbank, Scanye, SkyCash Poland, StrategyLabs, Sym P2P Ltd., Urban.one, vintom.com, XCHANGER and representatives of the following law firms: Dentons, Wardyński i Wspólnicy, SGP Legal Snażyk Granicki, Traple Konarski Podrecki i Wspólnicy.

Surveys were distributed among representatives of the aforementioned entities electronically and conducted through the interankiety.pl survey platform. Extended surveys were conducted during in-depth direct interviews (IDIs) with the representatives of the entities. Statements gathered in the report were collected via e-mail after interviews had been conducted. Research was conducted between August and October 2016. Not all of the entities mentioned decided to take part in the survey and in-depth interview.

LEGAL NOTE

Opinions found in this report have been expressed based on the knowledge gained from market research and the authors' experience. Authors do not take responsibility for decisions taken based on the opinions found in the project "Polish Fin-Tech Market – Development Barriers and Opportunities."